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ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN AND
RELATED MATTERS.

Hearing held in Court Room 20
Court House
361 University Avenue
Toronto, Ontario

Rowe: in ch

The Honourable Mr. Justice S.G.M. Grange	Commissioner
P.S.A. Lamek, Q.C.	Counsel
E.A. Cronk	Associate Counsel
Thomas Millar	Administrator

Transcript of evidence
for

July 20th, 1983

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TORONTO, ONTARIO

ROYAL COMMISSION OF INQUIRY INTO CERTAIN
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Court House, 361 University
Avenue, Toronto, Ontario, on
Wednesday, the 20th day of July,
1983.

9 THE HONOURABLE MR. JUSTICE S.G.M. GRANGE - Commissioner
10 THOMAS MILLAR - Administrator
11 MURRAY R. ELLIOT - Registrar

APPEARANCES:

15	P.S.A. LAMEK, Q.C.	Commission Counsel
16	T.C. MARSHALL, Q.C.)	Counsel for the Attorney-
	L. CECCHETTO)	General and Solicitor
17		General of Ontario (Crown
		Attorneys and Coroner's Office)
18	I.G. SCOTT, Q.C.)	Counsel for The Hospital
	K.J. ROLAND)	for Sick Children
19	R. BATTY)	
	M. THOMSON)	
20	D. YOUNG	Counsel for The Metropolitan
		Toronto Police
21	W.N. ORTVED)	Counsel for numerous Doctors
22	C. CARD)	at The Hospital for Sick
		Children
23	E. McINTYRE	Counsel for the Registered
24		Nurses' Association of Ontario
		and 35 Registered Nurses at
		The Hospital for Sick Children

(Cont'd)



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1 APPEARANCES: (Continued)

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4 W.A. BOGART Counsel for Susan Nelles -
Nurse

5 G.R. STRATHY) Counsel for Phyllis Trayner -
6 P. RAE) R.N.A.

7 B. JACKMAN Counsel for Mrs. M. Christie -
R.N.A.

8 J.A. OLAH Counsel for Janet Brownless -
R.N.A.

9 S. LABOW Counsel for Mr. & Mrs. Gosselin,
10 Mr. & Mrs. Gionas, Mr. & Mrs.
11 Inwood, Mr. & Mrs. Turner, Mr.
12 & Mrs. Lutes and Mr. & Mrs.
13 Murphy (parents of deceased
children)

14 F.J. SHANAHAN Counsel for Mr. & Mrs. Dominic
15 Lombardo (parents of deceased
child Stephanie Lombardo); and
16 Heather Dawson (mother of
deceased child Amber Dawson)

17 W.W. TOBIAS Counsel for Mr. & Mrs. Hines,
18 (parents of deceased child
Jordan Hines)



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--- On commencing at 10:00 a.m.

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THE COMMISSIONER: Yes, Mr. Lamek?

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MR. LAMEK: Mr. Commissioner, before I ask Dr. Rowe to go back into the witness box there is something that I would like to address, if I may, from last night, when there was a discussion about the number and identity of the babies about whose deaths I propose to lead evidence. I am afraid I was not as clear as I should have been last night.

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The Order-in-Council, sir, refers to
ac Wards 4A and 4B between July 1,
31, 1981, so we know from Dr. Gilmour-
ce that there were 34 such deaths.

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It is also common knowledge, sir, that the police identified 46 deaths that they considered initially to merit investigation and they subsequently reduced that number to 28, which they regarded as suspicious. The police, sir, were not directed or restricted to deaths in a particular time period or to deaths in a particular location, and in the result the police list of 46 deaths includes 10 about which I do not propose to adduce evidence.



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The children included in the police

46 about whom my present intention is to adduce no
evidence are these, sir, and if you would care to
make a note in the Statement of Prima Facie Facts.

THE COMMISSIONER: All right.

MR. LAMEK: The names are listed
at Paragraph 71, page 43.

All of those on the first page; I
will come back to the first one in a moment.

On page 44, No. 13, Elizabeth Karklins,
died September 10, 1980, having gone from the ward
to the Operating Room. She died in the OR. I do not
propose to adduce evidence about her.

No. 14, David Jenkinson, who died
on September 15, had gone from the Cardiac Ward to
the Operating Room to the ICU, where he died.

Nancy Falcao, No. 15, died September
17 in the Operating Room having gone there from the
ward.

No. 16, Edward Arorash, who died on
September 24, 1980, had gone from the ward to the
Operating Room, where he died.

No. 22, Sean Pennie, who died
November 25th, 1980, had gone from the ward to the OR
and eventually died in the ICU.



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No. 23, Timothy Goulden, died

3 November 28, 1980, had gone from the ward to the
4 Operating Room where he died.

On the next page, No. 34, Arif Huda,
who died February 19, 1981, in the Operating Room,
having gone from there to the ward.

No. 35, Michael Fanjoy, died

8 February 25, 1981, again having gone from the ward
9 to the Operating Room, where he died.

10 No. 44, on page 46, Artemis Voineskos,
11 who died March 19, 1981, having gone from the ward to
12 the Operating Room to the Intensive Care Unit, where
he died.

14 Those are the 10, sir, about whom
my present intention is not to lead evidence.

15 THE COMMISSIONER: I have only nine
16 so far. Was there one on page 1?

17 MR. LAMEK: Oh, Foster, did I miss
18 out Foster, forgive me.

19 Yes, Janice Foster, No. 25, again
20 went from the ward to the Operating Room to the ICU
where she died December 11, 1980.

21 THE COMMISSIONER: All right, that is
22 10.

23 MR. LAMEK: If it should appear, sir,

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at a later stage that on the evidence something may have happened to any of those children while they were on Wards 4A or 4B which caused or contributed to his or her subsequent death elsewhere, then of course I will go into the matter and adduce the evidence, but it is not my present intention.

I am excluding the 10, sir, for those reasons. I will come back to reconcile the numbers in a moment, if I may.

First, in light of the places where they died, they are not strictly within the Terms of Reference and, second, because in the case of surgical deaths or deaths following surgery without the children ever having returned to the wards, it certainly appears that the likelihood is remote that their deaths are attributable to anything that may have occurred on Wards 4A and 4B.

With respect to the numbers, the police had 46, I have taken 10, that leaves 36. Dr. Gilmour-Bryson's evidence was that there were 34 deaths on the ward. The other two who are not I confess strictly within the Terms of Reference but about whom nevertheless I propose to lead evidence are, first, Laura Woodcock, who is No. 1 on the police list. You may remember, sir, that she died on the ward



A.5

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2 but the day before our period begins June 30, 1980,
3 and in my view, sir, unless directed otherwise, that
4 should be considered and I propose to lead evidence
5 about it.

6 The other added starter is Kevin Pacsai
7 who is No. 40 on the police list, page 46. He died
8 within the period but not on the ward. Keven Pacsai
9 had been transferred from the ward directly to the
10 Intensive Care Unit approximately four hours before
11 he died. He died in the Intensive Care Unit. I
12 propose, sir, to include that death because, first, it
13 appears subject of course to the evidence that the
14 critical symptoms developed on the ward were
15 indeed the reason for his transfer. Second, the
16 interval between his leaving the ward and his death
17 was sufficiently short that one cannot preclude the
18 possibility that it was a ward occurrence or circum-
19 stance that was involved in his death and, third, and
20 perhaps most compelling, this was one of the four deaths
21 in respect of which Susan Nelles was charged. We will
22 certainly be involved in the consideration in the
23 second phase of the Inquiry, sir, and in my submission
24 it would be rather artificial to exclude it from the
25 first part.

26 So I come then to 36 deaths about

27

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A.6

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2 which it is my present intention to adduce evidence.

3 I should make one thing perfectly
4 clear, sir, because the numbers that have been talked
5 about the last couple of years, talked about suspicious
6 deaths and that sort of thing, the 36 deaths I have
7 just attempted to identify by category are not at
8 least yet to be considered as suspicious deaths. They
9 are all of the deaths which in my submission you are
10 required to investigate. In the light of all of the
11 evidence of course you may conclude that none or some
12 or all of them are suspicious, but that is a determina-
13 nation, sir, that you will of course make later. For
14 now the 36 are only brought forward as the total to
15 be examined.

16

17 MR. ORTVED: Can I just say that
18 yesterday Mr. Lamek indicated that the Gittens baby
19 was one of the babies that he intended to include
20 and I take it that he has now revised that?

21

22 MR. LAMEK: That is right. Gittens
23 is not one of those. Gittens died elsewhere than the
24 ward, like Pacsai in a sense, but Pacsai in my
25 submission, as the most compelling reason for his
inclusion here, is the fact that he was one of those
in respect of whose death a charge was laid, and he
would therefore of necessity be involved within the
scope of this Inquiry.

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THE COMMISSIONER: Yes. I think

people should have time to reflect on that but if anyone has any contrary views about the scope of the investigation I think sometime fairly shortly these should be brought forward, but I do not imagine that anyone has any immediate comments.

MR. STRATHY: The only immediate

comment I would have is that it may not be possible at a very early stage to say whether some one or more other deaths should be included in the review.

What I understood Mr. Lamek to be

saying was that he would be open to suggestion on reasonable grounds to extend the scope by any other number of children.

MR. LAMEK: Of course, yes, sir.

THE COMMISSIONER: Subject always,

of course, to the Terms of Reference. I may not be able, in some cases where they died in the Operating Room, but if there is no connection with the ward at all, I would probably have to have the Terms revised.

MR. STRATHY: I think it would be

subject to the proviso that whoever suggested it be reviewed or extended produces some reason for doing it.



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THE COMMISSIONER: Yes.

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MR. LAMEK: May I ask Dr. Rowe to
come to the witness box, then?

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DM, jc
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2 DR. RICHARD DESMOND ROWE, Resumed

3 DIRECT EXAMINATION BY MR. LAMEK (CONTINUED):

4 Q. Dr. Rowe, I would like to start
5 today by going back in time from the point to which
6 we had progressed yesterday, to a death that
7 occurred in August 1980, that of Paul Murphy. Now
8 the Hospital record here is a very bulky one and I
9 believe that my particular interest lies in the third
10 of the three volumes of it, so I thought it proper to
11 reproduce the Hospital record in its entirety. I
12 will show it to you now and ask you if you can
13 recognize it so we may mark it as an exhibit.

14 A. I recognize Volume 1 as Paul
15 Murphy's Hospital record.

16 Q. Thank you.

17 A. I recognize Volume 2 as Paul
18 Murphy's Hospital record.

19 Q. Thank you.

20 A. And Volume 3.

21 MR. LAMEK: Thank you very much. Could
22 this be marked, Mr. Commissioner, the entire exhibit
23 together perhaps as A, B and C?

24 THE COMMISSIONER: Exhibit 80.

25 --- EXHIBIT NO. 80-A: Volume 1, Medical Record
of Paul Murphy.

--- EXHIBIT NO. 80-B: Volume 2, Medical Record
of Paul Murphy.



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---- EXHIBIT NO. 80-C: Volume 3, Medical Record
of Paul Murphy.

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Q. I tell you, Dr. Rowe, I believe the matters which I am particularly interested in are to be found in Volume 3 of the record. Of course if there are matters in either of the other volumes that you think should be brought to our attention that is the reason they are all here.

Now, Paul Murphy died on August 23rd, 1980, on the Cardiac Ward, did he not?

A. Yes, he did.

Q. And he was then almost 15 years old?

A. Yes.

Q. And he had had a long acquaintance with the Division of Cardiology at the Hospital for Sick Children?

A. Yes.

Q. He had undergone I believe surgery at the age of 12-1/2 years, and since then although seen very regularly he had continuing and it is described in this way in the chart as intractable congestive heart failure, is that right?

A. Yes.

Q. Now there is behind you again,



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2 Dr. Rowe, a diagram of the heart of Paul Murphy. Can
3 you tell me first whether it accurately portrays the
4 heart of that boy?

5 A. I understand that to be so.

6 MR. LAMEK: May that be the next
7 exhibit please, Mr. Commissioner?

8 THE COMMISSIONER: Exhibit 81.

9 --- EXHIBIT NO. 81: Heart Diagram of
10 Paul Murphy.

11 MR. LAMEK: Q. And would you please
12 describe the anatomy of that heart, please?

13 A. I am not familiar with all the
14 previous history of this patient.

15 Q. Yes.

16 A. He is a patient that has been
17 followed since his very early days by Dr. Fowler of
18 the Division, and so I am only familiar with what I
19 have been informed by Dr. Fowler and others.

20 Q. Yes, that is understood.

21 A. He had a condition which is
22 called variously ventricular septal defect with
23 pulmonary atresia but in other terms it has been more
24 popularly known as tetralogy of Fallot with pulmonary
25 atresia. So it was the most severe form of the
condition.



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The characteristic in his case was
that he had extremely small pulmonary arteries. The
tetralogy you will remember is a large ventricular
communication and obstruction to blood going out to
the lungs. He had, as part of that malformation, a
right aortic arch meaning that the aorta came out the
left ventricle normally and then went upwards and
instead of curving to the left side of the body and
going down inside the chest it went to the right.
While ordinarily that is no problem for anybody, in
somebody who has a very severe malformation like this
there can be problems because the aorta becomes very,
very large since it is carrying most of the blood.
There is very little blood going to the lungs. The
diagram here represents his status at the last
admission and he had at some time in the first part
of his assay the aorta removed and a plastic tube
graft placed in there to substitute for that because
it had become so huge and enlarged that it had
compressed the entrance of blood from the upper part
of the body into the heart. The supravena cava was
being compressed by the huge aorta

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The aorta is large as I have said because very little blood was getting out to the lungs.

This is an extremely difficult condition to treat because unless these arteries are large they will not accept the normal amount of blood to go through the lung. So in order to try and enlarge those arteries he had had a large patch, or gusset placed by the surgeons into the pulmonary artery and up to its bifurcation or branching.

My understanding of this is that over the years this had not helped the growth of the arteries and because of the fact that he had the small arteries it was not possible to close the ventricular defect. Because if that had been closed and blood could not be pumped out through the lungs because of the small size of the arteries, in other words the sponge would not have accepted the material, then there would have been a lot of back pressure and immediate failure and death. So this had to be left as sort of a safety valve as it were so that blood, if it couldn't get out that way could go over the other side.

His situation was such that he nevertheless could not get much blood through the lungs so he was continually short of oxygen and his ventricle

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Rowe, dr.ex.
(Lamek)

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B2.2

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2 was failing, the pump part of it was failing and he
3 had a lot of what is called tricuspid regurgitation
4 and heart failure. He had had very many problems
5 which had required many admissions for this condition
6 and it was regarded that he was in intractable
7 failure, meaning that there was nothing that could
be offered to improve the situation.

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2 C/BB/ko I gather from Dr. Fowler that there had
3 been many attempts to try and improve the situation
4 but that it had become recognized that all the modern
5 methods available were not working and the anatomy was
6 defeating the situation.

7 Q. Doctor, thank you. The course
8 of Paul Murphy's final stay in the hospital is I think
9 reasonably summarized in the discharge or death
10 report at page 118 of Volume 3. Perhaps you could just
11 turn to that to get an overview of his final stay. I
12 am a bit interested by the names at the bottom of this
13 report, Doctor. The typed name is that of Dr. Jedeikin.

14 A. Yes.

15 Q. The name on the left is that of
16 Dr. Olley.

17 A. Yes.

18 Q. And the signature is that of
19 Dr. Fowler, is it not?

20 A. Yes.

21 Q. "He is a boy who has post-
22 operative tetralogy repair with
23 pulmonary artresia who had a conduit
24 repair of his right ventricular
25 outflow tract at 12 years of age
as well as a replacement of his



1

2 "aortic arch. He has progressively
3 become debilitated with severe
4 intractible congestive heart failure,
5 unresponsive to medical therapy using
6 digoxin, lasix or hydrodiuril."

7 He had been admitted this time because
8 he appeared lethargic and he had involuntary movements,
9 particularly of his arm, did he not?

10 A. Yes.

11 Q. And apparently of his face as
12 well, facial muscles and vomiting?

13 A. Yes.

14 Q. And he was admitted to try to
15 adjust the medications that he was receiving for his
16 congestive heart failure and try to do something about
17 keep the congestive heart failure under control?

18 A. Yes.

19 Q. He was seen in the Neurological
20 Department, the involuntary movements of his arms,
21 hands, face and so on and no particular cause for that
22 could be found. He continued on digoxin and diuretics
23 while he was in the hospital and he was given
24 analgesics as required.

25 On the evening of the 23rd of August,
26 1980, he had a cardiac arrest and died.



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And that, in very short compass, is the cause of his final four days in the hospital, is it not?

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A. Yes.

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Q. Now, he had been seen in the follow-up consultation by Dr. Fowler on July 15th, 1980, and that may give us a clearer picture of the boy's condition. That reporting letter on that interview is found at page 3 of Volume 3, a letter dated July 16, 1980 to Dr. Dennis in Brampton who, I take it, was the referring physician or the family physician of this boy?

A. Yes.

Q. He reports that he had seen him the previous day, July 15th, and goes through the history.

"Physical examination: On general examination he looked moderately ill with a respiratory rate of 30 per minute and marked pitting oedema of his feet and ankles extending up to almost the level of his knees."

I take it oedema is a characteristic symptom of congestive heart failure, isn't it?

A. It's a late feature.



C 4

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2 Q. It's a late feature?

3 A. Yes.

4 Q. "His abdomen seemed swollen
5 and the circumference was 69 centi-
6 metres at the umbilicus. His liver
7 was 6 centimetres below the right
8 costal margin and very tender and
9 his spleen was 3 centimetres below
10 the left costal margin and tender.
11 His blood pressure by oscillometry
12 and his right arm was 100/60 and his
femoral pulses were palpable."

13 Pausing there, is that the picture of
the patient in severe late congestive heart failure?

14 A. Yes, it is.

15 Q. Reports on the cardiovascular
16 system, electrocardiogram and can I take you to
17 Conclusions and Recommendations:

18 "On the basis of this assessment I
19 feel that this boy is again having a
20 lot of difficulty because of his
21 severe intractible heart failure
22 secondary right ventricular disease
23 and small pulmonary arteries. He was
discharged on digoxin and hydrodiuril.

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"Because of the gravity of the situation
I felt that he should be admitted for
further stabilization. He was inter-
mittently rather confused during my
examination, but most of the time was
lucid.

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This boy is remarkable in that he
seems to come around after his many
difficulties. I feel that he probably
is not going to survive long, but I
am sure we can make him more comfort-
able by changing his diuretic regimen
and increasing his serum potassium
level."

Which, on the day of the interview

had been 1.8.

We can easily say that is not a very
optimistic picture that is painted by Dr. Fowler in
the middle of July.

A. No.

Q. Indeed, it is an exceedingly
gloomy outlook of this boy, isn't it?

A. Yes, it is.

Q. Now, shortly before that
consultation Paul Murphy had spent some time in



C6

1
2 the Hospital for Sick Children, had he not, he had
3 been admitted on June 23rd, spent a couple of weeks
4 while efforts were made to try to control congestive
5 heart failure and he had been discharged on July the
6 8th. There is a discharge note with respect to
7 that admission at page 164 of Volume 3. Again, in
8 order to get a feel for the picture I suggest it
9 might be helpful to look at that, Doctor.

10 The note is written very late, for
11 some reason it didn't get into the chart at the
12 time of the discharge but it is written by
13 Dr. Michael Reynolds and after the apology for the
14 late arrival he goes on to say:

15 "He was admitted first on June 23, '80
16 to July 8, '80 and then again on 15th
17 July to 22nd July, both times in
18 severe terminal congestive cardiac
19 failure associated with his inoperable
20 complex heart disease. Both times he
21 was vigorously treated with a combina-
22 tion of diuretic treatment and each
23 time he left hospital symptomatically."
24
25 I'm sorry, what does that mean "left
hospital symptomatically"?

A. I imagine that he left with



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symptoms.

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Q. I would have thought so too
but it is a curious advert to find:

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"He was somewhat improved though
obviously still terminally ill with
his heart disease."

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10
So, it appears doesn't, Doctor, that
over the summer of 1980 Paul Murphy was a very
frequent visitor to the Hospital for Sick Children,
his condition was clearly serious?

11

A. Yes.

12

Q. Do you agree with the assess-
ment from your review of the chart, with the assess-
ment of severe terminal congestive heart failure?

13

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A. Yes, I actually saw him

during that period of June myself in consultation
while he was on the ward and I felt he was in a
very severe state and he had been having a lot of
trouble at that time of vomiting as well.

19

20

21

Q. And his complex heart disease,
as referred to in that earlier discharge report, was
inoperable, was it, there was no question about that?

22

A. Yes, it was.

23

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Q. All right, he was admitted
for the last time, as we know, on August 19, 1980



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and he presented at that time, as I recall it, having manifested what's called confusional state, which means I take it exactly what it says?

3

A. Yes.

4

Q. Poor memory, not responsive to communication and not following through with thoughts and that sort of thing?

5

A. Yes.

6

Q. Headaches, as he says involuntary movements of his arm, swelling in the ankles and other limbs and vomiting. He was admitted for a neurological review and for the adjustment of his heart failure medication. He had been on digoxin and diuretics throughout this period had he not, Doctor?

7

A. Yes.

8

Q. And the progress notes of this last admission, which begin at page 124 of Volume 3, and maybe I can fairly characterize, and tell me if I'm wrong, there's a series of notes about his confusional state referring to the involuntary movements and the swelling and adema that he was manifesting.

9

A. Yes.

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Q. Page 127, for example, the

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Rowe, dr.ex.
(Lamek)

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first note on the page, and the date which isn't
clear, but prior to or on the 21st, second entry in
the note is:

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"Oedema - generalized oedema over body
especially both feet."

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5

The next note, the same day at

6

7 o'clock in the morning, the bottom of the note,
edema - feet and hands still puffy. Cough - has
occasional wet wheezy cough.

7

The pattern is pretty constant
throughout the notes, is it not?

8

A. Yes.

9

Q.

Interestingly, on page 130,

10

and this is merely an example of it because this

11

is also not unusual in this chart, it is recorded

12

on page 130 under the second note, 23/8/80 1900 hours,

13 notwithstanding these obvious difficulties and

problems, vital signs are stable. Although there was

14

some fluctuation from time to time throughout the

15

four days for the most part his vital signs appear

16 to be relatively stable, do they not?

17

A. Yes.

18

Q.

But even in that note,

19

reference to continuing edema in feet and legs,

20 circulation, extremities remain very cool and blue.

21

Then on that same day at 10:15, 10:25

22

in the evening he died. Perhaps we could look at

23

page 131 because that is the nurse's note of the

immediately preceding period. The bottom half of

24

page 131, 7:30 to 10 o'clock:

25

/DP/ak



1

2

"Vital signs - stable.

3

4

Behaviour - orientated lapsing into confusion in later evening. Taking sips of water. Requesting oxygen off and on."

5

6

7

At 10 o'clock he was sitting up in bed very confused at 10 past 10:00 "patient involuntary of stool".

8

9

A quarter past 10:00:

10

11

"Patient rolled over and turned to side then became unresponsive.

12

13

Respiration at this time very shallow and laboured. Blood pressure hard to obtain. Oxygen given by mask.

14

Dr. Wilkinson called."

15

16

At 28 minutes past 10:00 he was

pronounced dead.

17

A. Yes.

18

19

Q. Going back then to page 130

it appears to be a resident's note, 23.8.80, 10:25 p.m.

20

21

"Called to see Paul because of lack of responsiveness. When examined he had no detectable blood pressure, pulses, heart beat or respirations.

22

23

24

25



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2

"Clearance of airway, stimulation and
oxygen did not have any beneficial
result.

5

6

Paul had been noted to be sitting up,
talked with nurses and seemed well
oriented just minutes before. No
evidence of vomiting, aspiration.
Had not been eating or drinking any-
thing.

7

8

9

The patient was pronounced dead at
10:28 p.m."

10

11

12

13

Clearly, Doctor, that was a sudden

death?

14

A. Yes.

15

16

17

18

19

20

21

Q. But fairly, I suggest, if I

am reading it right, not accompanied by several
of the events or elements in the pattern we have
seen in other deaths. There is no reporting in any
event of any arrhythmias, ventricular fibrillation,
bradycardia, anything of that sort here. That may
be because recordings were not made but there is
no evidence of it, is there?

22

23

24

A. No, there is no evidence of
it, but the way in which he died, however, suggests
he died in ventricular fibrillation.

25



1

2

3

Q. Suggests he died of ventricular fibrillation?

4

A. Yes.

5

6

7

8

Q. Are any of the events which you have agreed in other cases are consistent with digoxin intoxication, are any of those events or circumstances present in this death, as it is recorded in the chart?

9

10

11

12

13

A. I think he had some neurologic signs which we have noticed in others, and he had vomiting. I am not sure whether vomiting was a major part of this term or not. I have not looked through the record that closely over this issue.

14

15

16

Q. I don't see anything about vomiting either in the final nursing note or in the note of the resident.

17

18

A. No, I think the major feature would be that the suddenness of his death was consistent with a major arrhythmia.

19

20

THE COMMISSIONER: Sorry, I missed that.

21

22

THE WITNESS: The suddenness of his death is consistent with a major arrhythmia.

23

24

25

THE COMMISSIONER: I think the question was whether it was consistent with digoxin



1

2

toxicity.

3

4

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10

MR. LAMEK: Q. I asked whether any of the events were consistent and Dr. Rowe has focused on any of the events, and identified one or two that would perhaps be common to a pattern consistent with that pattern which we have seen in other cases in which you acknowledge to be consistent with digoxin intoxication.

11

12

A. Only the sudden death and the presumed dysrhythmia.

13

14

Q. Sudden death and a presumed dysrhythmia.

15

A. Yes.

16

17

Q. Is there any evidence of a sudden onset of bradycardia?

18

A. No.

19

20

Q. You said no vomiting or anything of that sort.

21

A. No.

22

23

Q. Doctor, are you satisfied in your medical judgment that this death was caused by Paul Murphy's clinical condition?

24

A. Yes.

25

Q. I take it the manner of his dying is consistent, in your view, with his



1

2

succumbing to a long standing congestive heart
failure?

3

A. Yes.

4

Q. Doctor, I want to go next to
a death which in some ways is rather similar to the
one we have just looked at in Paul Murphy's case
and that is the case of Laurette Heyworth. We do
not have a chart for Laurette Heyworth so you are
going to have to - we don't have a diagram, we do
have a chart.

5

A. We don't have a diagram?

6

Q. It appears there may be a
diagram. I ask you first, can you please identify
for me what I understand to be the Hospital records
for Laurette Heyworth? It says in the first page of
the rather thick volume, Part II of two parts. I
tell you I have not see a Part 1 of two parts and
maybe you can do no more than identify it as part
of the record of that child.

7

A. This is the record of Laurette
Heyworth. I cannot be sure that it is the complete
record.

8

Q. It does, however, appear to
deal certainly with her last admission, does it not?

9

A. Yes, it does.

10

11



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MR. LAMEK: Thank you. May that be
the next exhibit, please, Mr. Commissioner.

THE COMMISSIONER: Exhibit 82.

---EXHIBIT NO. 82: Medical Records of Laurette
Heyworth.

MR. LAMEK: Q. I said in some
respects this case is a little reminiscent of the
Paul Murphy case. This was an 11 year old girl,
was she not?

A. Yes.

Q. And had a history of serious
problems not restricted to cardiac problems.

A. No.

Q. And had rheumatoid arthritis
as a small child and it stayed with her, and she
did have cardiac problems.

A. Yes.

Q. And again, no stranger I
take it to the Hospital for Sick Children?

A. No.

Q. We have located a diagram.
It is behind you, Doctor, to the right. Can you
tell me first if it accurately portrays the state
of Laurette Heyworth's heart?

A. I think it is a good



1

2 diagramatic representation.

3 MR. LAMEK: May that be the next
4 exhibit, please.

5 THE COMMISSIONER: Exhibit 83.

6 ---- EXHIBIT NO. 83: Heart Diagram of Laurette
7 Heyworth.

8 MR. LAMEK: Q. Doctor, could you
9 describe the cardiac difficulties that appear in
10 the diagram and, if you think it appropriate to refer
11 to any of her other non-cardiac problems as going
12 to the total picture of the child, please do so.

13 A. Well, I'm not really
14 competent to talk about in detail the other problems
15 that she had, but I think I can outline in a broad
16 way what was involved and, then, if it is necessary,
17 others could perhaps amplify.

18 This unfortunate child was born with
19 hydrocephalus, a meningo-myelocele, a congenital
20 defect of the spine associated with hydrocephalus,
21 meaning expansion of the cavities of the brain with
22 fluid, which is treated by a form of shunt which allows
23 drainage of the fluid in the brain into some other
24 part of the body.

25 In the first instance, I believe she



1
2 had what is known as a ventricular atrial
3 shunt and this is a valve, plastic tube, connecting
4 I believe the ventricles of the brain with the
5 right atrium. In other words, this is placed
6 into veins in the neck and passed down so that it
7 sits in the right atrium, and this diagram of Laurette
8 is meant to try and represent the status of that
9 situation. At the time of death she did not have
10 that in, but it is important to show it because this
is the contributing factor to her cardiac disease.

11 When the tube is in place it
12 decompresses the brain, as it were, by allowing
13 the fluid to discharge into the circulation. I am
14 not sure exactly how long that had been in place
15 but in 1979 she developed a problem, which has since
16 become well recognized, of multiple small clots
17 seeding off the end of the catheter into the right
18 side of the circulation and out to the lungs. It
19 has been demonstrated here in artistic form that
20 these clots will go out as far as small vessels in
21 the lung when the major arteries going to the
22 lung through the pulmonary artery break up into their
23 small branches and eventually get down to a size
24 of the very smallest vessels which are not much
25 bigger than a red blood corpuscle in diameter
and then these things will plug various vessels.

DM.jc
E 1

2 So that they will cause an obstruction to the blood
3 flowing through the lung. They do this on both sides
4 and the condition gives rise to elevation of pressure
5 behind the obstruction, thickening of the wall of the
6 pumping chamber because of that pressure and
7 eventually right heart failure.

8 When this was recognized in this
9 girl the shunt was removed and a different site for
10 the discharge of the fluid from the brain was
11 apparently set up and this was a ventricular peritoneal
12 shunt as I understand it. Nevertheless, the damage
13 which she had in the lung vessels from the embolization
14 of clot was permanent and was not relieved by any
15 management that was offered. So that she developed
16 persistent and severe right heart failure which
17 progressed to the point where it became intractable,
18 meaning that no matter what was being done in the
19 way of medical management for the heart failure there
20 was no obvious or lasting response and there was no
21 improvement in the situation.

22 One of the difficulties with this
23 situation is that the more obstruction you get, at
24 least the more time goes by, once you get a certain
25 degree of obstruction the more obstruction you tend
to get it heaps up on one another, even though there



E.2

1

2 are no free particles floating around any more. In
3 other words, what happens is that there is pulmonary
4 vascular obstruction, obstruction of blood flow
5 through vessels in the lung and it just gets steadily
6 worse.

7 In some forms of congenital heart
8 disease where that type of damage to the vessels
9 occurs there are escape routes such as ventricular
10 defects and other things that allow blood to push
11 through onto the other side and therefore relieve
12 some of the pressure on this side. But in this
13 situation the pressure can mount indefinitely and
14 goes up and up and up, and usually there is a break-
15 down of this valve situation because the valve can't
16 tolerate the pressure and so there is leakage backwards
17 and the failure, as I say, becomes intractable. So
that is basically what went on inside this child's
heart.

18 Q. If I understand you, Doctor,
19 the cardiac difficulties and the heart failure, the
20 thickening of the muscle walls, were all secondary to
an entirely different condition?

21 A. It was certainly not due to
congenital heart disease.

22 Q. It appears that Laurette Heyworth

23

24

25



P. 3

1

2 originally had a normal, properly constructed heart,
3 does it?

4 A. We believe so.

5 Q. A cardiac course had been
6 followed by Dr. Fowler over an extended period of
7 time, hadn't it, and he had seen her for reassessment
on July the 18th, 1980.

8 Could you turn to page 27 of the
9 Hospital record please.

10 A. I have that.

11 Q. That is Dr. Fowler's letter of
12 July the 21st reporting to the referring paediatrician
13 on the interview that he had had with Laurette
14 Heyworth for reassessment on July 18th.

15 He records her history. Can you tell
16 me please what is cor pulmonale?

17 A. Cor pulmonale is a term that is
18 applied to patients who have heart - difficulty with
19 heart function that is secondary to changes in the
20 lung. There is a difference of opinion about how the
21 term should be applied and many people simply apply
22 it to individuals who have diseases of the lung
23 airways that create that situation, but it can be
24 broadly used to apply to any form of vascular disease
25 in the lung.



11.4

1

2 Q. All right. He refers thereafter
3 to many other problems due to hydrocephalus and
4 neurological complications from that. Paraplegia,
5 bilateral hip dislocation and neurogenic bladder and
6 so on. She developed juvenile rheumatoid arthritis.

7 "Her most recent admission to
8 hospital was about six weeks ago and
9 she was fairly well controlled on
10 medication until about two weeks ago
11 when a progressive increase in
12 swelling has been noted."

13 And again, is that suggestive of congestive heart
14 failure, Doctor?

15 A. Yes, and in the late stage.

16 Q. "I was talking to the mother
17 five days ago and we increased her
diuretics and this has not had any
effect."

18 And that is as of the end of the third week in July.

19 "Conclusions and recommendations: I
20 feel that this girl with cor pulmonale
21 secondary to a ventriculo-atrial
shunt and embolization of the lungs
22 is not doing very well. She has
23 certainly an increase in her right

24

25



E.5

1

2 "ventricular failure and needs more
3 medication.

4 "We have to be very careful using
5 these huge doses of diuretics, however,
6 because she develops electrolyte
problems."

7 So it looks like a very careful and rather tightrope
8 walking type of management that is needed?

9 A. Yes, indeed.

10 Q. And Dr. Fowler in the last
11 paragraph says:

12 "If things go well I would be
13 interested in seeing her in a further
14 three-four months but if there are
15 problems I can see her sooner."

16 Reading between the lines, would I
17 be unduly skeptical to think that perhaps he didn't
18 expect to see her in three-four months?

19 A. I think he thought he might see
her sooner.

20 Q. Yes. With the kind of history
21 and observations that are reported as of the 21st
22 of July, Doctor, are you able to form any view or
23 opinion as to the prognosis for this child?

24 A. I would think that she had been
25



E. 6

1

2 in that state for about, I am not sure how long it
3 was now, about two years, or a year and a half or
4 something of that sort. I would think that she is
5 nearing the end of this stage, but I don't know that
6 you can make very accurate predictions on that, just
7 that it is very advanced and the prognosis is guarded.

8

9 Q. On page 29 there is Dr. Fowler's
10 prior reporting letter about a week before the one
11 we just read, dated July 15th, 1980, again to

12 Dr. Gerstein:

13 11 "This girl was admitted to hospital
14 12 last month for reassessment and a
15 13 summary of her course is enclosed.
16 14 She improved in hospital but recently,
17 15 I understand, she has become more
18 16 œdematous again and I suggested that
19 17 the mother give her more diuretics.
20 18 Apparently this has been effective.
21 19 I think that this child is probably
22 20 eventually going to die of cor
23 21 pulmonale but I think with manipulation
24 22 of medication we can make her fairly
25 23 comfortable.

26 24 " I am to see her in my office in the
27 25 next few days and I will report about
28 26 findings at that time."

29



11.7

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2

A. Yes.

3

4

5

6

Q. So again as we saw with Murphy
the similarity over the course of the summer repeated
exposure to this patient by cardiologists dealing
with a problem about which he apparently has very
little cause for hope, is that fair?

7

8

A. Yes.

Q. The last admission to the
Hospital was on August the 26th. Can you tell us
please what was the reason for that admission?

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

A. I think the problem was she had
a lot of abdominal pain. In addition to a lot of
accumulation of fluid in the belly and gross heart
failure.

Q. Was there not also some concern
about trying to correct the electrolyte imbalances
as a result of the heavy diuretic doses she had been
receiving?

A. I think she had, as most people
do at that stage, difficulty with the sodium levels
in the blood.

Q. Now, Doctor, from your review
of the course of her last admission to Hospital, is
there anything of particular significance that we
should have in mind in understanding perhaps the



1
E.8

1

2 reason for this child's death on September the 2nd?

3 A Anything during the course of
4 her hospitalization?

5 Q Yes. We have seen, in general
6 terms, the ongoing course of this child and the state
7 to which she had come by the summer of 1980. Anything
8 of particular significance during the course of her
9 last relatively short stay?

10 A No. I think the abdominal pain
11 seemed to be one of the major features there and that
12 was I gather looked at by appropriate consultants
13 without finding any surgical reason for the pain, so
14 we don't know what that pain was due to. But we
15 suspect that it was probably, at least I would have
16 suspected and I don't know whether they did at the
17 time, I would think they might, that the pain was
18 due to further swelling of the liver and the presence
19 of fluid in the abdominal cavity. Her girth, her
20 abdominal girth was increasing I see during that time.
21 So this abdominal pain situation was sort of uppermost
22 I think, as well as the question about the attempts
23 to modify the effects of the failure and then I think
24 the question of vomiting just prior to death.

25 Q Doctor, page 153 of the record
in the progress notes. There is a note I think by



E. 9

1

2 Dr. Wilkinson who was a Resident, I believe, dated
3 August the 28th, 28.8.80, refers to a "new problem".
4 "Vomited twice since 8:30 on 27.8." And there appears
5 to be something that she began to do at this stage,
6 that doesn't seem to have been an earlier complaint,
7 does it? Anyway, Dr. Wilkinson so recorded it as a
8 "New problem. No abdominal pain." And so on.

9

A. Yes.

10

Q. Sort of the left marginal note,
11 although there is no margin, records: "Dig level
12 2.5 on 27 Aug."

13 And indeed the Biochemistry report I
think is found at page 191, so states. Then at the
bottom: "A. Suspect dig toxicity."

14

A. Yes.

15

Q. "P. Will hold digoxin again."

16

A. Yes.

17

Q. I can't find any prior record
18 in the course of this stay of digoxin having been held
before that.

19

20

21

22

23

24

25



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F 1

2 Q. But I take it that Dr.
3 Wilkinson, or maybe it is unfair to ask you, but can
4 one infer, short of talking to him, that what he was
5 doing was linking this, what he thought was a new
6 problem of vomiting, to the somewhat elevated digoxin
7 level of the day before and saying the two may be
linked. Is that what he appears to be doing?

8 A. That's what that note suggests.

9 Q. Yes. Is that a concern that
10 you would have had in this child, Doctor?

11 A. That the vomiting might be due
12 to digoxin?

13 Q. Yes.

14 A. I would think that is a distinct
15 possibility because this baby, this youngster, is
16 someone with severe failure who has had a lot of
17 manipulation with diuretics and so on. So, vomiting
would have to include that differential.

18 Q. Right. In fact I referred you
19 to the page of the Biochemistry report, Doctor. The
20 first is page 191 where apparently a sample submitted
21 on August 26th, the date of the child's admission for
22 digoxin assay had been reported back as not sufficient
23 quantity. At page 193, sample, again sample on the
24 27th of August, reported a level of 2.5 nanograms per
millilitre.

25



F. 2

1

2 A. Yes.

3

Q. And that no doubt is the
4 level to which Dr. Wilkinson was referring.

5

As far as I can see, that is the only
6 digoxin level recorded during the final stay?

7

A. Yes.

8

Q. Of Laurette Heyworth?

9

A. Yes.

10

Q. There is a note on page 195,
11 apparently a sample was submitted September 2, at noon,
12 and the note is "digoxin to follow", but I do not
13 find any report of that.

14

So, we don't know what level may have
15 been recorded in that sample.

16

But on page 158 of the record, again
17 in the Progress Notes, and this I take to be a
18 Cardiology Fellow's note, is it, on-service note?

19

A. On-service note Core 1, meaning
20 a first year paediatric resident, general paediatric
21 resident.

22

Q. Sorry. His order or proposal
23 at the foot of page 158 with respect to medication is
24 "give digoxin". So, digoxin is being held after the
25 2.5 level had been recorded and apparently on the
afternoon of the 28th of August it was resumed.



F.3

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2

Do you see any difficulty with that
course of medication, Doctor?

3

A. Well, I would think that I don't
know what transpired between the resident and the
cardiologist but I would suspect they must have
conferred on that. I doubt that a Core 1 resident
would make that decision on his own. But in any event,
whatever the decision was, it appears to be that the
level of digoxin, the blood level is a little over
the usual guideline that the other aspects of the
case warranted continuing. That is the only conclusion
I can draw from this. I don't know what the situation
was because I wasn't there.

13

Q. Sure.

14

A. But that could be determined
I'm sure.

16

Q. Is it again, Doctor, one of
those tightrope situations where you want to control
the heart failure on the one hand and you recognize
there may be some symptoms that are unfortunate if
you do that?

20

A. Yes.

21

Q. And as the chart goes on from
the last couple of days of August and the first couple
of days of September, there is a pattern, is there not,

24

25



F. 4

1

2 of edema cyanosis, swelling. Is that the kind of
3 pattern you would expect to see in a child late in
4 severe congestive heart failure?

5 A. Yes.

6 Q. At page 165 there is a nursing
7 note on the lower third of the page, bottom third of
8 the page, for the long night 1/9/80, September 1st,
9 written at 7 a.m. I am interested in the vital signs
10 reports. It reports temperature, heart rate,
11 respiration and so on. Cardiac monitor showed several
ectopics since midnight.

12 Now, first, I take it that cardiac
monitors were available on the Cardiology Ward?

13 A. Yes.

14 Q. And that is a device to which
15 the patient is in some way hooked up?

16 A. Yes.

17 Q. And how in fact does the monitor
18 operate, Doctor? Do you set it to give a warning
19 signal at particular rates or what happens? I don't
know how those things work.

20 A. You can just observe them. It
depends upon the model as to what might be done.

21 Q. Yes.

22 A. I don't know exactly what the
models were at that time.

23



F.5

1

2 Q. But there is a monitor?

3 A. You can set rates so that there
4 will be an above and below which extremities you may
5 have an alarm sound.

6 Q. Well, the child is apparently
7 attached to the cardiac monitor of one kind or another
8 and showed several ectopics. What are ectopics,
9 please?

10 A. That means premature beats.

11 Q. Okay.

12 A. Prematurely occurring beats.

13 Q. All right, they included PUC's?

14 A. I think that suggests PVC's.

15 Q. PVC's.

16 A. Premature ventricular contractions
17 I think that is short for.

18 Q. All right. Beginning about
19 6 a.m. And ectopic P waves. Is there also an
20 electrocardiogram that can be attached to the monitor?

21 A. Yes. That is usually what they
22 are observing on the monitor.

23 Q. An ectopic P wave beginning at
24 about 5 a.m. Heart rate was monitored hourly for
25 recording, respiration recorded hourly, increased
48 to 52 since 4 o'clock in the morning, was dyspneic.



F. 6

1

2 What is that, painful breathing?

3 A. Dyspneic means difficulty in
4 breathing.

5 Q. Difficulty breathing throughout
6 the night. Not a particularly comfortable night
7 I take it, Doctor?

8 A. No.

9 Q. Page 166, long night note
10 continued. I take it by now we are really talking
11 about September 2. The shift started on September 1
12 but we are now in the morning of September 2 I think,
13 Doctor. It is the long night shift that started
14 September 1?

15 A. Yes.

16 Q. Now, at the bottom of the page.
17 Laurette - is c/o complain, Doctor, is that what that
18 means?

19 A. Yes.

20 Q. "Laurette c/o of shortness of
21 breath since 0730. Oxygen was given
22 by mask. Felt uncomfortable in any
23 position. Restless. Doctor notified.
24 0830 patient expired. Death was very
25 quick. Parents weren't in room. Upset."
Now, again, that I take it sounds like
a sudden event?

25



F.7

1

A. Yes.

2

Q. Very quickly?

3

A. Yes.

4

Q. Is there any indication here of

5

the other cluster of symptoms that we have seen in
6 other cases: seizure, arrhythmias, bradycardia,
7 vomiting, that sort of thing?

8

A. She had, I think the main thing
9 is dyspneic and some irregularity at one time there,
10 I don't know for how long that went on. I think a
11 few hours before the event.

12

Q. Yes. Fairly, Doctor, in the
13 cases that we have remarked upon to date, it seemed to
14 me, if my recollection be right, that there has been
15 a relatively regular heart rate and heart beat and
so on that has suddenly gone into arrhythmia?

16

A. Yes.

17

Q. At the time of the onset of
18 the critical symptoms?

19

A. Yes.

20

Q. As I read this, that doesn't
appear to be the case here. Am I wrong about that?

21

A. No, except that I suppose, I
22 don't know how many others were on monitors but a
23 monitor would allow people to pick up irregularity.

24

25



F.8

1

2 Q. Yes.

3

4 A. Perhaps other than on the
hourly pulse rates and so on a little earlier it
5 seemed, which is perhaps an explanation for that.

6

7 Q. Do you regard any of the
final events that were reported in this chart as
being consistent with digoxin intoxication?

8

A. Yes.

9

Q. Which are they?

10

A. I think the ectopic beats might
11 be.

12

THE COMMISSIONER: I'm sorry, I can't
13 hear you, Doctor.

14

THE WITNESS: The ectopic beats might
be, Mr. Commissioner.

15

THE COMMISSIONER: All right.

16

THE WITNESS: And the abrupt final
17 episode. I don't see any record there of what the
monitor showed at that time.

18

MR. LAMEK: Q. I'm sorry, we don't
know that?

19

A. We don't know, but it was
20 obviously fairly rapid.

21

Q. All right. I take it, Doctor,
22 that it is also your view that the events as they are
23

24

25



F. 9

1

2 recorded are consistent with their clinical condition
3 and course?

4

A. Yes.

5

Q. From your review of this chart,
6 have you been able to form any opinion as to the
7 probable cause of death of this child?

8

A. I think she died from the effects
of chronic heart failure.

9

Q. At the time of her death, or
10 following her death, do you recall any question raised
11 by any other cardiologist or Cardiology Fellow
12 suggesting some other cause of this child's death?

13

A. I do not.

14

Q. Thank you.

15

Now, Dr. Rowe, can we look to the
death of, which I think follows the point in time that
we reached yesterday, and we have now reached back to
the two deaths that we passed over, and, in this case,
Francis Volk. There is a chart that purports to
portray the condition of Volk's heart. Again, can you
tell us if that is a reasonable representation of the
condition of his heart?

16

A. Yes.

17

MR. LAMEK: May that be the next
exhibit please, Mr. Commissioner?

18

19



F.10

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3 THE COMMISSIONER: Yes, that would
be Exhibit 84.

4

--- EXHIBIT NO. 84: Heart Diagram of
Francis Volk.

5

6

7 THE COMMISSIONER: We don't have a

copy of it apparently.

8

9

MR. LAMEK: You don't have a copy of
the small one? Have mine, Mr. Commissioner, I don't
understand it anyway.

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Rowe, dr.ex.
(Lamek)

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G/DP/ak

Q. Dr. Rowe, would you please describe for us and show us on the diagram the cardiac malformations, deformations, difficulties of Francis Volk?

6

7

A. If I may just have a moment to look at the -- to check one thing.

8

Q. Yes, of course.

9

10

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A. This is a youngster who had a number of abnormal situations relating to the heart and the lungs. The most important one, as far as the circulation is concerned, is the coarctation of the aorta which is represented here following its correction or repair. There would have been at that time a ductus arteriosus as well but that was treated at the time of the repair, I believe.

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One of the important additional defects was an atrial communication, that is a hole in the atrial septum, an atrial septum defect, in which blood could pass from the left side to the right. Complicating all this was an abnormality of the right lung. This was a baby who had a number of what we call dysmorphic features, meaning that the baby had a number of physical characteristics that were a little unusual in appearance and also had a hypoplastic right lung.



G2

1
2 That is, the right lung was too small. This leads
3 to over-distention of the left lung which then
4 pushes the heart over into the right side of the
5 chest from the left side where it normally belongs.
6 If the right lung cannot extend properly because
7 it is too small, under-developed, then the left
8 lung tends to try to take over the function and it
9 becomes grossly distended and that pushes the heart
10 to the right side of the chest, so the heart's
11 action is somewhat handicapped, on a mechanical basis,
by this pressure.

12 Because the right lung is small then
13 the artery going to the right lung from the main
14 pulmonary artery where it divides into left and
15 right branches, the right side of the artery is
16 very small, and this situation is a difficult one
17 because the hypoplastic lung is liable to become
18 infected and it disturbs the dynamics of the
circulation of blood going to the lungs.

19 So that the problems here were
20 complicated by the - the problems as far as the
21 heart were concerned were complicated by the lung
22 difficulty and there was also, as it proved, a
23 condition that was additional in the immune system
of this baby and there was what is known as a
24
25



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partial DiGeorge Syndrome, D-i-G-e-o-r-g-e. This
is a condition in which part of the thymic tissue
or the thymus gland is missing and that is a
very important area for the immune system of the
body, meaning that if you have something abnormal
of that sort you are much more susceptible to
infection. The immune mechanism is not as good as
it should be.

9

So that is the basic problem, a baby
with some congenital defects, an atrial defect
and a coarctation, with a relatively hypoplastic
area or under-developed area of the aorta but nevertheless
basically an ordinary coarctation plus an atrial
defect and then disturbance of the whole pulmonary
circulation because of the severely hypoplastic
right lung.

16

Q. Thank you, Doctor.

17

The baby was admitted at the age of
one day, was he not, from hospital in Thunder Bay,
sent down to the Hospital for Sick Children from
Thunder Bay Hospital?

21

A. He went to the Neonatal floor,
yes.

23

Q. He went to the Neonatal floor
on the 27th of July, I believe.

24

25



1

2

A. Yes.

3

4

Q. He was born on the 26th and
I believe admitted to Sick Children's Hospital on
the 27th?

5

A. That is correct.

6

Q. Why was he sent down here?

7

A. I think that he was found to
have his heart on the wrong side because of this
distended lung, and must have been having symptoms
from that. I have not checked on the admitting
note, but ---

8

Q. Once again, I suggest that
the course of the child is reasonably summarized
in the discharge or death report which is on page 31
of the chart. Could we usefully look at that,
Doctor?

9

A. Yes.

10

Q. Apparently half an hour after
his birth the baby was dusky, and we talked about
that yesterday, and fast respiration and was placed
in oxygen. He developed increasing respiratory
distress over the next six hours and required more
oxygen. Other problems, possible infection of some
kind and antibiotics were started at the hospital
in Thunder Bay.

11

12



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On arrival at Sick Children's, it is
reported, he had double volume blood exchange
transfusion. Can you tell me about that, please?
What is that and why was it done?

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A. I am not sure, I would have
to look at the record for that. He was at that time
under the neonatologist and he was not under our
care at that particular point. Usually that is
done because of jaundice.

Q. What is it, first of all,
Doctor?

A. I would first have to look at
the part of the chart where it refers to this so that
I know. What is written on the discharge report
is ---

Q. Mr. Commissioner, while
Dr. Rowe is doing that, would this perhaps be a good
time to take a short break?

THE COMMISSIONER: All right. We
will take 15 minutes then.

---Short recess.

---Upon resuming.

THE COMMISSIONER: Yes, Mr. Lamek.

MR. LAMEK: Q. Dr. Rowe, we were
talking about Baby Volk and I had asked you about



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the reference in the discharge report at page 31 of
the Hospital record as to his having had a double
volume blood exchange transfusion on his arrival
at Sick Children's Hospital. You were going to
find that portion of the chart that explained what
was done and why it was done.

7

8

Were you able to do that over the
break?

9

A. I have not been able to find
everything that will clarify this completely, but
there is a note from the neonatalogist on page 150.
It is his initial consultation report which is
made out on the first examination of the infant by
the senior staff person involved.

15

Q. Yes.

16

17

A. This is, I am not sure - it
says Intensive Care Unit there. I think that is
the date ---

18

19

Q. That is the admission date,
is it not?

20

21

A. I am not sure what date it is
because I - that sounds as though it is down in the
main Intensive Care area.

23

24

Q. I am sorry, but where do I
see a reference on page 150?

25



1

2

A. Page 150, it is half way down the page, it says on examination, poorly perfused? septic and then an arrow pointing to ET#1. I would wonder whether that might not refer to the exchange transfusion, #1.

3

4

5

6

Q. I see. There is another query on the left hand side, lower page. It looks like NB? Rhesus incompatibility.

7

8

9

A. Yes.

10

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Q. Would that also be a reason for doing a blood exchange transfusion?

A. Yes, that would be a more usual reason, but I'm not quite sure why they would have done a transfusion - exchange transfusion for sepsus, but maybe things were pretty bad.

Q. In any event, does that involve the total exchange of the baby's blood for new blood?

A. It is not a total exchange but it is an exchange of a very large amount of the circulation. They draw out blood and replace it with fresh blood.

Q. Thank you for that, Dr. Rowe.
We go back to the discharge report on page 31, the overall view of this child's course.



1

2

The middle of the page, on examination, no cyanosis
or clubbing. Clubbing as I understand it refers
to a heart beat of a particular kind, does it?

5

A. No, clubbing means a
dilatation of the fingertips that appear like a
tennis racquet.

8

Q. I'm sorry?

9

A. I had it quite wrong.
That accompanies long
standing cyanosis but you would not expect to
see it in a new born baby.

11

12

Q. Hardly worth remarking upon
in a day old child.

13

A. No.

14

15

16

Q. "Heart rate 140 per minute,
respiratory rate 40 per minute, one half cm liver
palpable below the right costal margin. No evidence
of heart failure."

17

18

19

What is the significance of the small
amount of the liver that is detectable below the
right costal margin?

20

21

A. That would suggest that there
is not severe heart failure.

22

23

Q. In fact, it is a little more
positive than that, is it not - no evidence of heart
failure.

24

25





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2

A. Yes.

3

4

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7

Q. It records blood pressure,

femoral pulses and speak about the dysmorphia that you have mentioned and cardiac impulse on the right side of chest. Heart sounds audible on the right side of the chest. It describes the sounds.

Then x-ray confirms that indeed the heart is located on the right side, with questionable hypoplastic right lung. That would appear on x-ray, I take it?

11

A. Yes.

12

13

14

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16

Q. And EKG is performed. The impressions were of two pacemakers not at sinus level but lower in the right atrium. Could you explain that to us please? It is a rather odd observation.

17

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A. The reason for that comment I would interpret to be related to the fact that the heart is on the right side of the chest. When that happens the question is whether the heart is really permanently on the right side of the chest or whether this is related to just the lung condition. It is usual to look at the P-wave appearances in patients whose heart is on the right because that may give you a clue as to whether the chambers are inverted or not.



DM, jc
H 1

It is the appearance of the P wave and its direction as compared to the normal that sometimes can give a clue to whether the atrial chambers are mirror image or not. So here there was a question, it was thought that the P waves were abnormal in that sense and so I think that was probably the inference here that possibly this means that the heart is really dextrocardia with situs inversus.

Q. When you say inverted, are there some situations where you find not only the heart on the right side but as it were back to front, twisted around?

A. Yes.

Q. And a two-dimensional epicardio-gram was done, and the inversion apparently is ruled out at that stage?

A. Yes.

Q. And then a cardiac catheterization. I wonder if it might be useful to turn to the catheterization report that I think is at page 202 of the record. That appears to have been performed on the 30th of July, two or three days after the child was admitted to the Hospital?

A. Yes.

Q. And the diagnoses that were made as a result of that investigation set out at the

25



H.2

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2 bottom, are those the ones that you have described
3 to us in referring to the diagram, Doctor?

4 A. Yes, except what is the last
5 condition named there, the ambient arterial supply
6 from the abdominal aorta to the right lower lobe and
7 that is not illustrated on this diagram but I can
perhaps show that.

8 Q. Would you, please, so that we
9 can understand that too, if it is a significant
10 finding, is it?

11 A. Yes, it does indicate that there
12 is a problem, a further problem with the lung. If
13 the lung is very small on the right side and not much
14 blood is going through the pulmonary artery, then
15 there are often branches that come off the aorta down
16 in the abdomen and they go up through the diaphragm
17 and supply part of the right lung. This is important
18 in some situations because it is a high pressure
19 blood supply to that lung and there is a possibility
20 of hemorrhage and problems of that sort.

21 Q. Thank you. All right, so those
22 are the investigations that were made and the diagnoses
23 that were arrived at.

24 Now the next page of the report, page
25 32 of the record, the child's course in the Hospital



H.3

1

2 is summarized. It records that on August 6 there
3 was a significant deterioration in the baby's
4 condition. Became hypertensive, hyperthermic,
5 developed increased respiratory distress, severely
6 acidotic with a PH of 6.98 and therefore incubated,
7 prostoglandin, and said that he was ductus dependent.
8 Ductus dependent means he is relying upon the duct
to produce mixing, does it?

9

A. That is right.

10

Q. In fact on the 6th of August
11 this baby had a cardiac arrest, didn't he?

12

A. Yes, he did.

13

Q. That I think you will find at
14 page 70 in the progress notes reported for August
the 6th, 1980.

15

"Various problems manifest at
16 10 minutes past midnight in the
17 morning and at half past twelve in
18 the morning cardiac arrest."

19

A. Yes.

20

Q. "No clinical pneumothorax".

21

A. Yes.

22

Q. "Good air entry".

23

A. Yes.

24

Q. And happily they were able to
resuscitate this child?

25



11.4

1

2 A. Yes.

3 Q. And good response to these
4 measures?

5 A. Yes.

6 Q. By 3:45 in the morning he is
7 described as stable on higher ventilation. So a bit
8 of an understatement in the discharge report isn't it
9 to say that he had a significant deterioration, in
fact he arrested on that morning?

10 A. Yes. that is true, and a PH of
11 6.98 is very close to being a lethal degree of acidosis.

12 Q. He then developed tonic and
13 clonic seizures. He had moderate hematuria, what
14 should we be thinking about that, Doctor, tonic and
clonic seizures?

15 A. Well, he was just having
16 convulsions, I dont' mean just, he was having
17 convulsions.

18 Q. Are those two varieties of
19 convulsions?

20 A. Yes.

21 Q. And the difference is what?

22 A. Tonic phase of a seizure is one
23 that usually precedes the clonic phase. Tonic is where
24 the stiffening occurs and the other is where the
shaking takes place.

25



H.5

1

2 Q. And hematuria is?

3 A. I don't know what that was.

4 Q. Can you define the term for us?

5 A. Oh, hematuria means blood in
6 the urine. I don't, I can't, I would have to look
7 in the note to see what that specific issue was.

8 Q. The white count increased to
9 32,000, is that indicative of some form of infection?

(2) 10 A. It might be. Yes, I think you
11 would probably assume that to be so and you would be
12 more than usually concerned about that in someone
13 where there was any question of a Di George syndrome.

14 Q. Now we may have done the
15 author of this discharge report a disservice by
16 saying he understated deterioration on the 6th,
17 because he records an arrest on the 7th. Strictly
18 speaking I guess what we looked at was an arrest in
19 the very, very early hours of the 7th, wasn't it?

20 A. Yes.

21 Q. So I have done him a disservice.
22 7th of August he had a cardiac arrest, required
23 resuscitation with adrenalin and so on. Hypocalcemic,
24 hypoglycemic thereafter.

25 On the 7th of August a systolic
ejection murmur was heard well over the back. Can



H. 6

1

2 you tell us please, what that means?

3 A. I don't know what that reference
4 is to, I would have to look in the chart about that
5 time.

6 Q. Is it a significant observation
7 in the course of this child, Doctor?

8 A. You might expect to hear a
9 murmur in that position.

10 Q. All right.

11 A. In a patient who has crepitation
12 of the aorta. You would also hear that murmur in
13 somebody who has a small pulmonary artery. I don't
14 appreciate the special significance of that comment
15 on that final day.

16 Q. He was gradually weaned off
17 prostoglandin and there was no change in his clinical
18 condition. He required digoxin and diuretics for
19 congestive cardiac failure and continued respiratory
20 distress. That appears therefore to be a condition
21 that developed at the end of the first week in August?

22 A. Yes.

23 Q. But not one that he demonstrated
24 when he first was admitted to the Hospital?

25 A. That is correct.

Q. A partial Di George syndrome



H. 7

1

2 and we have referred to that already. Now, 25th
3 of August he had surgery?

4 A. Yes.

5 Q. In the meantime I believe,
6 Doctor, he had gone to Ward 4A on August the 19th,
7 had he not?

8 A. From the Intensive Care?

9 Q. From the Intensive Care?

10 A. Yes.

11 Q. That is at page 87 of the chart?

12 A. 87 --

13 Q. On August 19th transferred to
14 Ward 4A?

15 A. Yes, it looks as though he went
16 from 7G, the Neonatal floor, to 4A at that point.

17 Q. Now if you follow that note
18 over to the next page, Doctor, the 4A transfer
19 acceptance summary, page 88, the second line on page
20 88 after referring to the right lung problem reads,
21 I believe:

22 "He is intermittently in failure
23 but has been controlled on digoxin
24 and diuretics. No failure today."

25 Now, when you have a child on
medications that are classically used to control



H.8

1

2 congestive heart failure, is it normal to see a
3 child exhibiting one day congestive heart failure
4 symptoms and another day not?

5 A. That would depend upon the
6 interpretation. I think that usually the patient who
7 requires digoxin and diuretics, and who has one of
8 two responses, he either gets-the failure is
9 controlled or it isn't controlled. There may be
10 fluctuations and indeed one day the diuretics may
11 do a little more than on another day. They may have
12 given lasix as a diuretic, or pushed for something
13 like that, and they might have just done some temporary
14 benefit which is not sustained.

Q. I see.

A. So it is possible, I wouldn't
15 know without referring to every detailed note there as
16 to how valid that statement is.

Q. The other event that preceded
17 the surgery on August the 26th as I recall it is that
18 on the 25th, before going to surgery, he went to the
19 ICU, didn't he, and I think you will find that at
20 page 96 of the chart. Certainly on the 26th, on the
21 25th of August, it seems the baby was transferred to
22 the ICU?

A. Yes.

24

25



H.9

1

2 Q. Is that usual, Doctor, to take
3 the child to the ICU before surgery, indeed on the
4 eve of surgery?

5 A. It is not usual, it would only
6 be if there was some concern about whether ventilation
7 might help the baby for some hours, put the baby in
8 better condition for surgery, and I think that previous
note, that note at the top of the chart.

9

Q. Yes.

10

A. Suggests ---

11

Q. The baby could benefit from

12

ventilation?

13

A. That they are considering that
possibility.

14

Q. Yes, for several hours prior to
surgery.

16

A. Yes.

17

Q. So that is the reason for sending
him to the ICU on the 25th, the eve he is scheduled
for operation?

19

A. I believe so.

20

Q. And the surgery is performed on
the 26th, and dealing with the coarctation of the
aorta and the patent ductus.

23

A. Yes.

24

25



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H. 10

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2 Q. And the patent ductus?

3 A. Yes.

4 Q. Postoperatively the discharge

5 report says on page 32, he had two major problems.

6 First, a continued need for ventilatory support.

7 Second, intermediate episodes of fever and deterioration
8 attributed to sepsis. Again they were keeping a pretty
9 close eye on the child's blood and seeing what they
could grow on that blood, I take it?

10 A. Yes.

11

12

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Q. On the 27th - could we refer first to the note as to the surgery. It is on page 99 of the Progress Notes. Dr. Fowler there under date of 26/8/80 talks about chronic failure, femoral pulse is not probable. I can't read the next one.

A. You mean the grade?

Q. Is that what it is?

A. Grade 2 out of 6, injection, murmur.

Q. Thank you.

A. At a stretch of the imagination that is murmur.

Q. And then we've got "The liver now more distended than it had been when the child first came in."

A. Yes.

Q. We've got 2 centimetres.

A. 2 centimetres, yes.

Q. Indicative of the failure.

A. Still within normal range.

Q. Thank you. And white blood cell count is below normal, is it?

A. No, it has come back to normal.

Q. Oh, it has come back to normal, all right.



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A. I would think that is what

that means.

Q. Needs coarctation repair to improve failure, should have operation today. Then, August 26th, again, I am having difficulty reading that, but I take it that is the report that Dr. Williams has indeed performed the surgery and a small picture of what he has done?

A. Yes.

Q. Thank you. On page 101, the day following surgery the child is presumably in the Intensive Care Unit. He is noted to be gasping, colour became dusky and at 10:20 became bradycardic, put into 100 per cent oxygen, very little if no effect, doesn't sound to be in very good shape on the day following surgery, does he, Doctor?

A. No, he sounds very bad.

Q. And, indeed, he really has a very eventful post-operative course, does he not? By the time we get to the end of September, into the early part of October, the lung problem is becoming rather serious and, indeed, on October the 10th he undergoes surgery for the removal of that right lung, doesn't he?

A. Yes, which is a very major step.



1

2

3 Q. At page 125 of the chart,

4

he has now been in the Hospital, what, two and a
half months but he has had surgery to repair the
coarctation of his aorta and he is now having
surgery to remove his hypoplastic right lung?

5

A. Yes.

6

Q. And the OR notes appear there
at page 125.

7

Now, following that, this course,
as I read the chart, becomes even more stormy, doesn't
it? On the 12th, page 126, he has two cardiac
arrests.

8

A. Yes.

9

Q. The first at 10 minutes to
2:00 in the morning with a flat ECG, and that
happens about 2 minutes after someone has recorded
his vital signs.

10

A. Yes.

11

Q. Apparently a very sudden
arrest at that hour in the morning. Is that bicarb.
on the next line?

12

A. Yes.

13

Q. That was given to him to
produce, what, sinus bradycardia?

14

A. They are just saying that

15



1

2

3 bicarb was followed by the production of the sinus
4 bradycardia, so, presumably there was no activity
5 electrically and then a slow heart rate developed.

6 Q. Okay.

7 A. Occasional complexes less
8 than 20 minutes. That note was made by a trained
9 pediatric cardiologist who was training to be an
10 Intensive Care person.

11 Q. Thank you. So, we really
12 had a totally flat ECG, no electrical activity at
13 all, as you say and bicarb is used and sinus
14 bradycardia produced and slow heart beat comes out.

15 The note almost at the bottom of
16 the page "? cause for arrest unknown". Is that
17 something upon which you might be able to help us,
18 Doctor? What is your view of that, if you have one,
19 why, two minutes after the child having his vital
20 signs taken, might he suddenly arrest, absolutely
21 completely, absolutely flat ECG?

22 A. Yes. I can't read the first
23 part of that "good day yesterday".

24 Q. "Good day yesterday".

25 A. "Wing from IV with reasonable
26 gases".

27 Q. Yes.



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A. Well, you know, one of the most likely reasons for that would be that having been on ventilation the baby wasn't able to easily sustain the function with remaining lung at that point. So, anything that causes - and in this situation, you would be really skating along on the one remaining lung and there is plenty of opportunity I would think for an arrest to occur.

Q. Okay.

A. One of the commonest causes of arrests in small babies in nurseries is that associated with respiratory problems.

Q. Well, that's in the very early hours of the 12th at 1:50 in the morning and you turn over the page less than a couple of hours later he apparently had a second arrest.

A. Yes.

Q. Half way down the page 0330.

A. Yes.

Q. Cardiac arrest.

A. Yes.

Q. "Monitor alarm ECG flat".

Again, apparently no electrical activity.

Resuscitation again started but old sodium bicarb seems to have done the trick again.



6

1 A. Yes.

2 Q. "Came back quickly and yawned".

3 Amazing picture.

4 Now, during the space of two hours
5 this child has arrested twice. Any other thoughts
6 with respect to the second arrest on that morning,
7 Doctor, other than, as you have already suggested?

8 A. I'm not sure exactly what
9 was done about the ventilator support after the
10 first one.

11 Q. Yes.

12 A. I can't see that.

13 Q. It doesn't seem to be an
14 indication that he's put back on to the ventilator?

15 A. No. I mean, it might be
16 possible to determine that I suppose by going through
17 the ICU notes.

18 Q. Yes.

19 A. But that would take some
time to do that.

20 Q. Sure.

21 Now, I'm a little puzzled. I don't
22 know whether there were two or three arrests on
23 this day because three-quarters of the way down,
24 page 127 there seems to be a note that at approximately

25



1

2

3 4 o'clock they had another cardiac arrest of about
4 one minute, responded to cardiac massage. Does
5 that appear to be three arrests in the space of,
what, three hours - a little over two hours?

6

7

A. I don't know. You see,
one note is made by a nurse.

8

Q. Yes.

9

A. And the other note looks as
though it is made by a resident.

10

11

12

Q. You mean it may be the
same one as the one that is recorded by the nurse
as having recorded at about 3:30?

13

14

A. At 3:30, yes, that's
possible, I don't know.

15

16

17

18

19

Q. Well, certainly there were
two notes of the earlier arrest. There is one at
the bottom of the preceding page and one at the
top of page 127 and you think these two may refer to
the same arrests that occurred between 3:30 and
4:00 in the morning?

20

A. I think that's possible.

21

Q. Okay. I would have thought
that two arrests in one night was enough for anyone.

22

A. Yes.

23

Q. And that all occurs on

24

25



1

2

October the 12th and the child doesn't look like a
particularly well child but a week later on the
20th he goes back to the ward, does he not?

5

A. On the 19th, is it?

6

Q. Before we do that, before
we get there, Doctor, let's pause at page 129. He
is still in the ICU and it is now October 14th.
The top half of the page, the heading is "Cardiac
Status". Oh, this refers, I'm sorry, back to the
two episodes of extreme bradycardia requiring CPR,
the two arrest situations is what is referred to here.

12

A. Yes.

13

Q. And page 133, on the 20th
apparently he is transferred from the ICU and over
the course of the next couple of pages we see the
acceptance, the transfer note from the ICU and the
acceptance from the ward, or at the bottom of page
135, indication going to ward.

18

A. Yes.

19

Q. Okay. There is a rather
blithe note at the bottom of page 134, isn't there,
Doctor? Having referred to the removal of the lung
on the 10th of October, 1980, reference subsequent
course uneventful. As I say, it is rather blithe
in light of the two arrests that occurred two days

24

25



1

2 after the removal of the lung.

3

4 the physician's amazement that the baby is still
5 alive.

6

7 Q. Yes. So, we have a child
8 going back to the ward on the 20th, at page 145 of
9 the chart, the record, and I think, Doctor, we've
10 got one of those jumbles again. Page numbered 145
11 should I think follow the page that's numbered 146.
12 If we start at page numbered 146 first we'll have
13 the clearer sequence.

14

15 Page 146 we've got the long night
16 nursing note on the 22nd of October, chest sounds
17 clear after suction, colour pale and 70 per cent of
18 oxygen, diaphoretic. That means the child is
19 sweating a lot?

20

A. Yes.

21

22 Q. Throughout the night,
23 restless behaviour, respiration rate 30 to 50,
24 substernal, intercostal indrawing, very irregular at
25 times, the apex pulse range 120 to 143 and regular.
That's what seems to be going on during the night.

26

27 Then it is recorded apparently
28 that on October 23rd - I can't read the name that
29 is written twice on page 145 but I take it this is

30

31



1

2

a physician's note, is it not, Doctor?

3

4

5

A. I think it is a physician,
yes. I can't read that either. I can't read the
signature.

6

7

Q. "Called to see Francis..."
the child's name, the child's first name -

8

"...for vomiting and then tachycardia...?"

9

A. Yes

10

Q. "After PT suction".

11

12

A. That would probably be
physiotherapy suction, meaning they were cleaning
out the mucus from the throat and so on.

13

14

15

16

17

Q. Okay. He records the pulse
rate that he finds, the respiratory rate pale with
indrawing respirations, left chest relatively clear.
I have trouble reading the rest of it. Is there
anything, if you can read it, of any significance
in there?

18

19

A. It just implies that the
heart is displaced to the right I think.

20

Q. Yes, okay.

21

22

A. And he's got a query, first
and second heart sounds (?). Normal I think that
must be.

23

24

Q. And if we turn back to

25



1

2

page 145, which seems to be the continuation of
that note:

4

5

"Francis continues to do poorly with
episodes of..."

6

What is that, cardiovascular instability?

7

A. Yes.

8

Q. "Chest x-ray shows good
inflation of remaining lung."

9

And this is what we propose to do about that, will
look for signs of infection and check electrolytes,
BUN, check the dig level, infection...?

12

A. Infectious diseases.

13

Q. Infectious diseases, right,
okay, because he had a rash, did he not, check
rash, yes.

15

A. I don't know where that is.

16

Q. Yes, there is reference
earlier to a rash developing.

18

A. A rash, yes.

19

Q. Okay. So, the resident
apparently called to see Francis, to see Baby Volk,
vomiting and tachycardia following the suction and
makes these observations and records what should be
done and then later apparently on October 23rd, 1980,
20 minutes past 5:00 in the afternoon a Code 23 is

22

25



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2409

1

2

called for the IV team, followed by a full code for
this baby who is pale and pulseless. Upon arrival -
I take it that means no heart beat?

3

A. Yes.

4

5

6

7

8

9

10

11

12

13

14

15

16

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18

19

20

21

22

23

24

25

DP.jc
J

1

2

Q. They put a tube into him, cardiac massage, intracardial epinephrine. Still no pulse and a sequence of drugs administered to him.

3

A. Yes.

4

Q. What is the note at the end of that short paragraph, ventricular fibrillation - I cannot read the last word?

5

A. I do not know whether that is "occurred", it may be,

6

Q. Because certainly they attempted to defibrillate --- That is the next comment, is it not?

7

A. Yes, they did, the next sentence.

8

Q. And flat line, is that it?

9

A. Yes.

10

Q. That is recording the ECG tracings?

11

A. That would be it.

12

Q. They stopped the fibrillation and the thing goes entirely flat again?

13

A. Yes.

14

Q. Does not respond to compression, epinephrine or anything else, and the baby is pronounced dead at 5:15 - obviously a mistake as to the time - oh, no, the note is written at 5:20, written after the death at 5:15.

15



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2411

J.2

1

The final diagnosis at the bottom
of the page is what syndrome?

A. They call it Scimitar syndrome.

Q. What is that?

A. I am not sure that is the
correct word for this condition but there is a
condition in which the right lung is hypoplastic, as
in this case, the heart is swung over to the right
somewhat. There is abnormal communications from the
aorta through the diaphragm through that abnormal
lung, but the veins from that lung drain into an
unusual position below the diaphragm as well. I do
not think that was the case here.

Q. Clearly the three things listed
as final diagnosis are not intended to be suggestions
as to the cause of death; at least I take that to be
clear. He refers to the surgical repair that has
been done.

18 A. Yes.

19 Q. That is merely a state of the
20 condition of the child, is it not?

A. Yes.

Q. Was there an autopsy on this
child, Doctor?

23 A. Yes, there was. It was a
24 limited autopsy.

25



J. 3

1

2 Q. That is right, heart and lungs
3 only.

4 Page 19, the final autopsy report.

5 After the history, the bottom line, the last paragraph
6 on page 20, according to the pathologist:

7 "Death is attributed to a
8 combination of acute broncho-
9 pneumonia and congestive heart
failure."

10 Doctor, when you reviewed this chart
11 did the condition of the child and the circumstances
12 of his death lead you to agree or disagree with that
13 stated cause of death?

14 A. No, I did not review this data
until later because I was away at the time.

15 Q. Yes, I understand, but when you
16 did?

17 A. When I did review it I would
have thought that the explanation offered there was
perfectly valid.

18 Q. We have a child here who, prior
to the final arrest, suffered three cardiac arrests
19 in the course of his hospitalization and then
eventually suffered an arrest from which he could not
be resuscitated. Again, Doctor, I ask you to look

20

21



J. 4

1

2 at the terminal events that occurred on October 23rd,
3 as they are recorded in the chart obviously, and what
4 we appear to have is arrhythmia is recorded.

5 A. During the arrest - is that
6 right, on page --

7 Q. I am looking at page 145 and
8 page 146.

9 A. He was found without any pulse.
10 It was during the resuscitation that they got the
11 arrhythmia --

12 Q. That is absolutely right, so we
13 do not know what pattern of heart activity preceded
14 this?

15 A. No, we do not, really. At
16 least I cannot see anything that tells us that.

17 Q. And the prior nursing note
18 really does not help us with that, does it?

19 A. No, it does not suggest there
20 is any bradycardia, though.

21 Q. Neither will it help us with
22 respect to any other of the symptoms or events that we
23 have seen exhibited in other of the cases that we have
24 looked at?

25 A. No.

Q. The child was on digoxin, was
he not?



J.5

1

2 A. Yes.

3

Q. During the course of his stay
in the Hospital, at least from the middle of August
until the third week in September, there seems to have
been
/a very regular and close monitoring of digoxin levels
on this child. The Biochemistry reports begin at
page 401 of the record. Let us just run through them
pretty quickly. I do not see a digoxin level reported
from the Biochemistry Department until I get to page
422 and there in a sample submitted on the 14th of
August a level is shown of 2.7?

11

A. Yes.

12

Q. That has an asterisk beside it
and the explanatory note is: "Results flagged with
an asterisk were reported today."

13

Is there any particular significance
to the "reported today" of the Biochemistry results?

14

A. I think it is a cumulative
report, so they identify which ones are --

15

Q. That does not suggest that
notable or potentially disturbing results are notified
immediately before the actual report is issued?

16

A. I think they may be, I am not
sure of that. I think that that is what is generally
meant by --

17

18



J.6

1

2 Q. That is the 14th of August
3 and next levels that I see are on page 424. The
4 levels seem to be dropping from the 2.7 recorded on
5 the 14th to 2.5 on the 20th to 2.1 on the 21st.

6 THE COMMISSIONER: What page is this?

7 MR. LAMEK: Page 424, Mr. Commissioner.

8 2.5 on the 20th, 2.1 on the 21st and
9 1.8 on the 22nd.

10 So if there was any concern at all
11 about 2.7 the level seems to be coming down. That
12 appears to be closely monitored, does it not?

13 THE WITNESS: Yes.

14 MR. LAMEK: Q. On the 25th, on page
15 425, the level goes up again to 3.1, on the 25th of
16 August. The following day as appears from page 426,
17 it is down to 2.0. Page 428, the next day again, the
18 27th of August, the level is at 2.5 and page 429,
19 the next day, there is daily monitoring of this level,
20 on the 28th of August, down to 2.1.

21 Page 433, some five days later, on
22 the 2nd of September, the level seems to be elevated
23 a little again up to 2.8 and on the 3rd, down to 2.4,
24 a series of levels that are marginally above that
25 conservative range?

A. Yes.



J.7

1

2 Q. Are they sufficiently above it
3 to cause you any concern in following that course of
4 levels?

5 A. I would not personally have
6 concern in this situation. I don't know what the
7 cardiologist who was responsible at that stage might
have thought.

8 Q. Whatever, it is clear they were
9 keeping a close eye on the levels?

10 A. Yes.

11 Q. On page 434, it was at 2.7,
12 on the 4th of September, and then things seemed to
13 come under control, on page 436, on the 9th of September
14 it was down to 1.3 and on page 438 on the 22nd of
September, 1.4.

15 Although those levels are some time
16 apart at least they appear to have recorded two
17 successive levels well within the therapeutic range,
18 do we not?

19 A. Yes.

20 Q. That, so far as I can see from
21 the report, Doctor, is the last of the digoxin levels
22 that are reported?

23 A. Yes.

24 Q. And particularly with the last

25



J.8

1

2 two levels reported, does that whole sequence of
3 levels from August 14 through to September 22, cause
4 you any concern as to any possible digoxin involve-
5 ment from therapeutic doses with this child's death?

6

A. No.

7

Q. Do you recall, Doctor, whether
there was any question raised by any other cardiologist
or Cardiac Fellow, with respect to any possible
digoxin involvement in this child's death?

10

11

A. I might not have heard any, if
it were.

12

Q. You were not there at the time?

13

A. I was away, and the report
would have been given to me by the Acting Chief when
I got back but he did not, to my recollection, bring
up any problems of that sort.

16

Q. Thank you very much, Doctor.

17

At least we are going to move on to
a record which is easier to handle than this morning's
have been so far.

19

Now, Doctor, the next death in
chronological order that occurred on the ward after
that of Francis Volk, was Matthew Lutes. He was not
on the list that was prepared in preparation for the
January 12, 1981 meeting. He died on November 17,

24

25



J. 9

1

2 1980, at 1:34 in the morning. Again, we have a
3 diagram which purports to show the condition of that
4 child's heart with its anomalies and deformities.
5 Could you tell us first if that does so indeed portray
6 those anomalies?

7

A. Yes, I believe it does.

7 MR. LAMEK: May that be the next
8 exhibit, please, Mr. Commissioner?

9

--- EXHIBIT NO. 85: Heart Diagram of
Matthew Lutes.

10

11 MR. MARSHALL: There does not appear
to be a chart for this baby in small form.

12

13 MR. LAMEK: We will have to watch the
big chart. We don't seem to have the small one.

14

15 THE WITNESS: You don't have the
small one?

16

MR. LAMEK: No.

17

Q. Could you describe, please,
the anatomy of Matthew Lutes' heart?

18

A. This is a baby with a number
19 of congenital abnormalities but from the point of
view of the heart the principal features were the
20 presence of coarctation of the aorta, up here, with a
21 patency of the ductus arteriosus in association, and
22 ventricular septal defects.

23

24

25



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2419

K/DM/ak

1
2 And ventricular septal defects usually occur
3 singly, but they can occur multiply and in
4 multiple numbers and in this case there were two
5 such defects. The precise position is not able to
6 be demonstrated on this diagram, but it is in the
7 ventricular septum and two defects were present.

8 There was I believe as well an
9 atrial defect which is not illustrated here. That
is a defect in the atrial septum as well.

10 I am not quite sure, I would have
11 to look at the full pathology report to know whether
12 that was a true defect, or a trap door foramen ovale
13 type defect, and that is the situation.

14 The circulation, the arrangement of
15 the heart otherwise was normal, the connection of
16 the veins to the appropriate atria was normal, and
17 the pulmonary artery and the aorta were in the
18 usual position. So it is coarctation of the aorta
19 with a ductus arteriosus and two ventricular septal
defects.

20 Q. Dr. Rowe, thank you. This
21 chart raises I think the question that we all have
22 to resolve if we can at the beginning, the question
23 of terminology and meaning.

24 You have been referring throughout

25



Rowe, dr.ex.
(Lamek)

1

2

K2 your evidence to congenital heart defects. Am I
3 right in thinking that those are malformations or
4 defects with which the child was born?

5 A. Yes.

6 Q. And they mean no more than
7 that, they came with him when he came into the
8 world?

9 A. Yes.

10 Q. But that is not necessarily
11 the same thing is it as a genetic malformation or
12 defect?

13 A. No. Okay, I will let you
14 proceed.

15 Q. Is it or is it not, what is
16 the difference, if any, between congenital and
17 genetic?

18 A. Well, genetic defect is also
19 congenital.

20 Q. Yes, it is also congenital,
21 but go on with it.

22 A. But not all congenital heart
23 disease arises from genetic causes.

24 Q. A genetic defect, or malforma-
25 tion I take it is one which is inherited with the
 genetic material information that come together at



1

2

K3 the moment of conception?

3

A. Yes.

4

Q. Whereas without any
5 chromosome defect or change or anything of that
6 sort, a congenital defect may develop in the course
7 of embryonic development?

8

A. Yes.

9

Q. Now I raise that question
here because in this child's instance there was
10 some question as to whether some of the difficulties
11 here might be genetic in origin, was there not?

12

A. Yes, very definitely.

13

Q. And chromosome investigation
was done and indeed as it turned out it was confirmed
14 that there was some chromosome abnormality with
15 respect to this child?

16

A. Yes.

17

Q. And that appears in
Dr. Hughes' letter to the referring physician at
18 the beginning of the chart on page 8?

19

A. Yes.

20

Q. I just wanted to be clear
because we have used the term congenital defects
21 throughout the evidence and I thought we had better
22 clarify what we are talking about.

23

24

25



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2

K4

A. Yes.

3

4

5

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7

8

9

the Sault on October the 20th. Apparently had been observed very shortly after birth to have trouble breathing, fast respirations. At one week a heartmurmur had been noted. The baby was transferred I believe, Doctor, to the Hospital for Sick Children for cardiological evaluation on November 12th, 1980, referred in particular to Dr. Izukawa.

10

A. Yes.

11

12

13

14

15

16

17

18

19

Q. Once again the death report is a useful summary of the course and it may be a useful place to start, just to get an overview of the events, and it is page 33 of the record.

He describes the neonatal course prior to the transfer to the Hospital for Sick Children.

20

21

22

23

24

25

With respect to the heart murmur, in item numbered 3, two-thirds of the way down page 33, he said:

"Initially this was thought to be a patent ductus. He was treated with fluid restriction but was not started on digoxin or diuretics. He was transferred to HSC because of continued deterioration."

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(Lamek)

K5

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2

Now, physical examination at the

3

Hospital for Sick Children:

4

"....no cyanosis or clubbing. Heart
rate 144, resp. 48, mild congestive
cardiac failure."

5

6

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And there seems to be something of

a development does there not, Doctor, between this
child's neonatal course described half way down the
page and the position that he presented when he
arrived at Sick Children's Hospital. He was
described as:"....very tachypneic with respiratory
rate of greater than 100."By the time he gets to the Hospital for Sick Children
he is at least at that moment recording a respiratory
rate of 48. On the other hand, he now has mild
congestive cardiac failure.Those are the conditions, some of
the conditions that are observed when he arrives.
He is dysmorphic; long fingers and toes; left
inguinal hernia and that sort of thing.I take it it was that first package
of observations that first led to the suspicion
that there may be a genetic matter to be pursued here.

A. The genetic possibility was



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K6 really based on the dysmorphic features. A combination of multiple defects makes people think about the possibility of a chromosomal defect.

Q. On page 34 the report of the initial chest x-ray shows a significantly enlarged heart. Cardiothorasic ratio of 65 per cent. What is that the relationship of the size of the heart to the size of the whole thorasic?

A. That is exactly it, yes.

Q. And what is, in a child this size, what is the standard against which you are measuring that 65 per cent?

A. Well that is a debatable question between radiologists and cardiologists, but we would generally be concerned about anything over 55.

Q. Anything over 55?

A. Yes.

Q. "...and marked increased pulmonary vascularity."

What does that mean?

A. That means that the normal appearance of rather lacey markings of vessels in the lung that you can see on a chest x-ray are much more plethoric looking and enlarged, you can actually



K7

1

2

see the visible, the large vessels, or the x-ray
image of the large vessels.

4

5

Q. The child has an electro-

cardiogram which showed a heart rate of 150.

6

"Right axis deviation", what does that mean?

7

8

9

10

A. That is just a summation of
the appearances that are obtained from specific
limb leads, it is just an electrocardiographic
term.

11

Q. All right.

12

A. And it is in that direction
in all babies that are born actually.

13

14

Q. And I take it this is right
atrial?

15

A. Yes.

16

Q. And right ventricular are
referred to.

17

A. Yes.

18

19

Q. Now this child is, when he
comes to you on November the 12th.

20

A. Yes, 3½ weeks.

21

Q. He was born on October the
20th, so he's 22, 23 days old, 3½ weeks.

22

A. Yes.

23

Q. First, what is the meaning of,

24

25



1

2

K8 and what if anything is the significance of the observa-
3 tion of right atrial and right ventricular hyper-
4 trophy?

5

A. Right atrial hypertrophy
6 would indicate that the right atrium is under some
7 stress and is enlarged, and the same thing would be
8 true for the right ventricular, that the muscle
9 mass is increased, or the chamber is enlarged.

10

Q. We have to observe that the
11 Hospital went to work very swiftly with this child.
12 He underwent a cardiac catheterization on the
13 afternoon of his admission. That revealed a
14 moderately large membranous ventricular septal
15 defect with pulmonary hypertension. What does that
16 all come down to in looking at this child? I
17 notice his entry with digoxin and diuretics and
18 oxygen and he is in a degree of heart failure,
19 is he?

20

A. Yes. The discharge report
21 is deficient in that description that says it's only
22 a single, it infers it is only a single ventricular
23 septal defect.

24

Q. Yes.

25

A. On page 61 the Angiographers
26 report demonstrates that there are two ventricular
27



Rowe, dr.ex.
(Lamek)

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K9

defects, that is the only importance. Now if you have a ventricular septal defect the importance to the baby is how big it is and if you have a tiny little pin hole thing it is not going to cause you any trouble. If you have a great big one then you are going to change pressures and produce pulmonary hypertension and allow a large amount of blood to flow through the defect and this is what the catheterization data suggests..

Q. So the observation on the preceding page was that on admission he was in mild congestive heart failure. The course of medical treatment was described as one that is classically associated with the treatment of CHF I take it?

A. Yes. You know, I think that one would want to have a little more detail. My impression from what has been told to me was that this baby had significant congestive heart failure at the time of admission. That the heart rate was 150, that the liver was 3 centimetres below the costal margin in here. That in addition to the cardioneagly there was an appearance of not only increased flow but some pulmonary edema. So that is not too mild, but these are differences of



K10

1

opinion expressed by different levels of physicians.

2

3

Q. That is certainly a good deal more dramatic picture than the one that has been described in the summary in this report.

4

A. Yes.

5

Q. I think we should come to the detail of that later, Doctor, because it goes to the course of treatment obviously.

6

A. Yes.

7

Q. Half way down page:

8

"By the 15th of November he had diffused fine creps in both basis."

9

A. Yes.

10

Q. Both basis of the lungs I take it?

11

A. Yes.

12

Q. What are fine creps?

13

A. These are very fine sounds, crepatations which are made when air passes over fluid that is in the lung sacs.

14

Q. Crepatation to me means squeaking or something like that.

15

A. No, it is not squeaking, these are fine distinct discrete sounds, crackles is what they are called.

16

17



K11

1
2 Q. "He remained in moderate
3 respiratory distress with a respira-
4 tory rate of about 60 per minute. He
5 had a 3 centimetre enlargement of his
6 liver. He was vomiting from time to
7 time. His vital signs essentially
8 stable and he was afebrile."
9
10
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13 -----
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25



1.
BB/cr

1 Q. Just going on with the
2 summary course, because we do need to go back to
3 some of this detail. The repeat test X-ray shows
4 increased pulmonary vascularity and congestion but
5 no focal consolidation. Does that mean it is
general throughout?

A. Yes, they were presumably referring there to the possibility of pneumonia.

Q. Records electrolyte levels
BUN venous gases. The digoxin level the previous day was 2.1, attempts by four doctors to obtain arterial gases were unsuccessful. He received multiple bolus doses of lasix in addition to his maintenance diuretics with little improvement in his clinical condition.

17 That sounds like a fairly drastic
18 administration of diuretics, Doctor, or do I react
too strongly to that?

A. No, I think that means
that if they were giving him multiple doses they
would be concerned about his state and wanting to
improve him as rapidly as they could.

Q. And in particular about his

21

25



1

2 congestive heart failure state.

3

A. And the congestion in the
lungs.

4

Q. Yes. Are those two
connected?

5

A. Yes.

6

Q. With little improvement in
his clinical condition?

7

A. Yes.

8

Q. Still didn't have a fever,
he wasn't septic looking, he was reasonably active,
he had moderate respiratory distress, he rates from
60 to 80. Most troublesome is this persistent fine
noises that are being heard in the base of his lungs.

9

Late evening of the 16th of November
showed some increased accumulation of fluid in the
chest.

10

"It was apparent ..." page 35 -

11

"...that his downhill course would
continue unless there was some inter-
vention. However, it was felt that
unless interference with gaseous
exchange could be documented, it was
not wanted to ventilate him in the ICU."
Now, could you explain that for us,

12

13



1

2 please.

3 A. Well, I think that suggests
4 that there was discussion about whether he should
5 go down to see if ventilation could help improve
6 the pulmonary congestion. That would be what I
7 would think about myself in this situation. I don't
8 know what conversations went on with the intensivists
9 about that but obviously the question that they might
10 have asked was whether the blood gases were such as
11 to warrant admitting him to an already fairly heavily
12 occupied unit.

13 Q. All right.

14 A. And I gather that the blood
15 gases were interpreted as meaning that they felt he
16 couldn't be helped, but I am jumping to conclusions
17 because I don't have any notes about that.

18 Q. All right. In fact he
19 arrested at 10 minutes to 1 on the 17th of November,
20 1980 and couldn't be resuscitated?

21 A. Yes.

22 Q. And then the post mortem
23 findings are recorded?

24 A. Yes.

25 Q. Now, Doctor, even from that
summary, do I correctly understand that the significant



Rowe, dr.ex.
(Lamek)

1

2 problem with Matthew Lutes course was the
3 congestive heart failure and the fluid in the lungs?

4 A. Yes.

5 Q. And was fluid in the lungs
6 secondary or caused by the congestive heart failure?

7 A. Yes, it would be.

8 Q. So, the basic problem is
9 one of CHF?

10 A. Yes.

11 MR. LAMEK: Now, Mr. Commissioner,
12 I am about to go into the rather more detailed course
13 of events but as it is a couple of minutes to one
14 is this a convenient time to break for lunch?

15 THE COMMISSIONER: Yes, all right,
16 until 2:30 then.

17 MR. LAMEK: Thank you.

18 ---Luncheon recess.

19

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BMB. jc

AA

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2 ---- Upon resuming:

3 THE COMMISSIONER: Yes, Mr. Lamek?

4 MR. LAMEK: Thank you, Mr. Commissioner.

5 Before I call Dr. Rowe back, the Hospital has been
6 good enough to provide us with a corrected copy of
7 the McKeil diagram, which, indeed, I understand the
8 big one has been corrected as well. May I substitute
9 that for the incorrect one? Oh, there never was a
small one, all right.

10 THE COMMISSIONER: It was 75. Well,
11 do you want to - will anybody tell on us if we just
12 slip in a new 75 for the old 75. If anybody wants
13 to take exception to it we would have to make it
14 75A, but I think we can just slip it in.

15 MR. LAMEK: In fact, Mr. Commissioner,
16 I don't think the document was marked as 75 because
17 there wasn't a small version of it and unless the
18 big chart is to be the exhibit, then there's no need
to worry about substituting the corrected one.

19 THE COMMISSIONER: All right. Well
20 then, we can get away with it, all right.

21 MR. LAMEK: Then we can get away with
22 it, that's right. The Hospital has been also good
23 enough to provide small versions of the Lutes diagram
which were not available this morning.

24

25



AA.2

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2 Dr. Rowe, please.

3 Q. Dr. Rowe, when we broke for

4 lunch we were talking about Matthew Lutes and we
5 had said, in the course of the review of this chart,
6 that on November 12th the child's congestive heart
7 failure had begun to be treated with digoxin and
8 aldactazide. I don't think we had identified the
9 diuretic drug. In fact, as I understand it, it was
aldactazide.

10 The chart on pages 75 and 76 - first
11 75, if you look at the medications record, the first
12 item on that record for November 11 seems to require
13 three digitalizing doses, does it not?

14 A. Yes.

15 Q. Of .041 milligrams each?

16 A. Yes.

17 Q. And they appear to have been
given as ordered on the 12th and 13th?

18 A. Yes.

19 Q. And the maintenance doses were
20 started on the 13th, although interestingly, it
21 appears that the first maintenance dose was given
22 before the -- no, sorry, after, 10 hours after the
third of the digitalizing doses. Is that so?

23 A. Yes.

24

25



AA. 3

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Q. And continued until the evening dose, or until the morning dose on the 15th and then put on hold?

5

A. Yes.

6

7

8

9

Q. Now, in the meantime, on November 13, there was an order, which is found on page 79, and that number is clipped off by the copying, but happily the number following it, page 80 is clear enough.

10

A. Yes.

11

12

13

Q. On page 79 there appears to be an order dated November 13 ordering a digoxin level and lytes and BUN for following morning.

14

15

That level is reported at page 89 of the chart by the Biochemistry Department as being 2.1?

16

A. Yes.

17

18

19

Q. And as we said yesterday, in looking at levels of that order, they are marginally above that conservative therapeutic range. Is that correct?

20

A. Yes.

21

22

23

24

25

Q. But on November the 14th, as appears from page 80 of the chart, there appears to be a conservative order made there presumably in



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AA.4

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2 light of the level, reduce the digoxin dose to .01
3 milligrams?

4 A. Yes.

5 Q. It had been initially 012, had
6 it not?

7 A. Yes.

8 Q. So, there is the reduction in
9 the maintenance dose following the recorded level of
10 2.1, and again on page 81, again on November 14th, on
11 the next page, there is an order calling for a digoxin
12 level on Monday. Monday of course didn't see a digoxin
13 level because the baby died very early in the morning
14 of Monday. So, that level was not done.

15 But on November the 15th, as we see
16 from page 82, there is an order at the bottom of the
17 page, a six-item order, No. 5: "Hold digoxin tonight
18 only".

19 Can you help me, Doctor, as to why
20 that order should have been given at that time? There
21 had been a reading of 2.1, a reduction in the
22 maintenance dose and now an order to hold a dose of
23 digoxin?

24 A. I think the baby was vomiting.

25 Q. Was ... ?

A. Vomiting, was it not?



AA.5

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2 Q. Well, let's take a look. You
3 are quite right, on page 50 of the chart, the third
4 note at 15/11/80 "Vomiting feeds; slow-feeder; dig
5 level 2.1 on the 14th".

6

7 Is there a suggestion that the
8 vomiting may have been some indication that 2.1,
9 although a barely elevated level, was perhaps a
10 little too high for this child?

11

12 A. I presume that was the interpretation placed upon that.

13

14 Q. Or as a matter of precaution
15 let's wait and find out?

16

A. Yes.

17

18 Q. Yes. So, on page 83 it is
19 clear that digoxin is restarted on the 16th, that
20 order being given at 9:30?

21

A. Yes.

22

23 Q. And on page 85 we find a whole
24 series of orders "For tomorrow", electrolytes, BUN,
25 all sorts of orders to be carried out 'tomorrow'.

26

A. Yes.

27

28 Q. Now, Doctor, is the pattern of
29 digoxin dosage and administration there satisfactorily
30 explained in your view by what we have observed, that
31 is to say, the slightly elevated level on the 14th,

32

33



AA. 6

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2 the reduction of the dose following that, the holding
3 of one dose because of the possible connection with
4 the vomiting that appeared on the 15th?

5 A. Yes.

6 Q. So, that in your view is an
7 adequate explanation of that pattern, is it?

8 A. Yes, and the electrolyte
9 abnormality on the 16th, they must have done an
electrolyte value as well on that day.

10 Q. I take it, Doctor, it is not
11 uncommon when one is first starting a regime of
12 digoxin administration to take a little time to fix
up on the right level of the maintenance dose?

13 A. It's not really the level of
14 the maintenance dose that we are fixing on. We are
15 trying to fix on I think the response of the patient
16 and we don't judge whether a patient responds to
17 anti-congestive failure by what his digoxin level is.

18 Q. I understand.

19 A. We don't aim for a specific
digoxin level.

21

22

23

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2 Q. I understand that. That
3 is not quite what I asked you.

4 I take it the purpose is to find
5 that dose which can be repeated over the course of
6 time and which will produce beneficial effects in
7 the patient without producing any indication of
toxicity?

8 A. Yes.

9 Q. And although clinical
10 observation is the main ingredient in that, nevertheless,
11 the levels are a guide, are they not?

12 A. Just as a clinical --

13 Q. Yes. Therefore, one takes
14 all the information that is available, including the
15 fact that the baby is vomiting at a time when there is
16 a marginally elevated level recorded and say, okay,
17 let me adjust my dose to get to the right level where
18 there is no chance of toxicity but equal chance
of getting beneficial effects.

19 That is the object of the exercise,
is it not?

20 A. Again, I disagree with the
21 introduction of the level which you use here because,
22 although we use a level, to be sure, the main issue
23 that we take notice of is the response of the patient --

24

25



1

BB2 2 Q. I understand. I'm sorry,

3 I did not mean to interrupt.

4 A. No, that is all that I
5 was saying.

6 Q. I understand that, but did
7 we not agree a few moments ago that the likely reason
8 for the reduction in the dose that was ordered in the
9 case of this child was the level that had been obtained
10 and, equally, the likely reason for withholding a
11 dose of digoxin is the possibility of a connection
12 between the vomiting which started to occur and the
13 previous level which had been produced by the earlier
14 maintenance dose? The two work together, do they
15 not?

16 A. Yes. I would not quarrel
17 with that view, except that the problem we have here
18 and the problem I have with this particular issue is
19 that you have a patient whose heart failure is getting
20 worse.

21 Q. Yes.

22 A. So, you again have to
23 accept some risks with the digoxin therapy.

24 Q. I understand that and I
25 don't think we are apart.

26 All I was suggesting to you when we

27

28



1

2 started this particular dialogue was that it is not
3 uncommon, when one is first getting a baby on to
4 digoxin, to have to move around with the dosage and
5 hold doses from time to time until you have got a
6 dose that produces the effect you want without
7 producing effects that you do not want.

8 A. Yes.

9 Q. I did not think it was that
10 contentious a proposition, but perhaps I did not state
11 it very clearly. Forgive me.

12 Doctor, what is toxoplasmosis?

13 A. Toxoplasmosis is an
14 infection of a special nature which can affect small
15 babies and can be present at birth.

16 Q. I notice on page 86 of the
17 record there is a requisition form accompanying a
18 sample requiring an examination of the sample for
19 toxoplasmosis.

20 Mainly curiosity, than anything
21 else, causes me to say what is that and why, in the
22 circumstances of this chart, was it being requested?

23 A. I think that the only
24 explanation I would have for that is that the diagnosis
25 that was entered by whoever filled out that form was
 clearly patent ductus arteriosus.



1

BB4 2

Q. Yes.

3

4

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A. Then, they ask for a TORCH study, which has been crossed out. If you had a ductus, you might be looking for a background of German Measles or something like that, and that is included in the TORCH study.

7

Q. I see.

8

9

A. I do not know why they changed it to toxoplasma. I don't understand --

10

11

Q. You have no ready explanation for that requisition?

12

13

A. No, unless there is a note in the record. That would have been on admission.

14

15

16

Q. Yes.

The date of that is the

12th. It may be a total red herring but it is something that occurred to me.

17

A. Yes.

18

19

20

21

It says, on page 44, the Admitting Resident is looking on his plan of treatment, he is going to treat the heart failure, he is going to evaluate the X-ray and the cardiogram and the ECHO.

22

23

24

25

Q. And evaluate for TORCH?

A. And he is going to evaluate



Rowe
dr.ex. (Lamek)

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BB5 2 for TORCH.

3

Q. All right. Thank you.

4

Somehow in the process that became
5 toxoplasmosis?

6

A. Yes. He was doing some
sort of a screening for infection.

7

Q. Now, doctor, we have looked
8 at the chart in overview and you have provided your
9 explanation for the pattern of digoxin dosages and
10 administration.

11

12

13

From your review of the chart, what
do you regard as significant for our purposes of
considering the time and manner of Matthew Lute's
death?

14

15

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A. The thing that impresses
me about the description of events is that the
congestive failure just steadily increased. It was
not unusually rapid but it just steadily got worse
despite the therapy that was being applied; and people
were looking for other reasons for explaining that,
such as infection; and wondering whether ventilation
might help, and I think his failure just appears to
me to be increasing steadily.

22

23

24

25

Q. Do you then agree with the
characterization that Dr. Heilbut put on this at



1

BB6 2 page 25 of the chart, the Discharge Report, where he
3 said it was apparent that his downhill course would
4 continue unless there was some intervention?

5 A. No, not on page 25. 35.

6 Q. 35, all right.

7 "It was apparent that his downhill
8 course would continue unless there
9 was some intervention."

10 A. Yes. I think that would
11 be a fair statement.

12 Q. Would you categorize
13 the downhill course as a steady decline, doctor?

14 A. Yes.

15 Q. Is it usual in such cases
16 where you are observing a steady decline of a patient
17 and the steady increase of the degree of failure for
18 the patient to go into a sudden and precipitous
19 decline at the end of the course?

20 A. I think that might happen
21 if the failure is severe enough, yes.

22 Q. You think it may happen?

23 A. Yes.

24 Q. Is that the usual course?

25 A. If the failure is severe,
yes, that can happen.



1

BB7 2 Q. Was this failure of the
3 severity that you would expect to see that sort of
4 rapid decline at the end?

4

5

6

7

8

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A. I would judge so, parti-
cularly on the basis that, the last day, there was a
lot more distress with his breathing and so on, and
I think this baby - and restlessness and so on - and
I think this baby had obviously worse failure that
day than before.

10

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Q. Doctor, maybe one of the
things that is puzzling people who are not versed in
your profession is the idea that there may be extended
periods of several hours where there appears to be a
remission from the kind of downhill course that you
are talking about where, through an entire shift, all
the signs may be of stability, of encouragement;
swelling is down, edema is down and irregularity has
disappeared. Is that uncommon for there to be - I am
sure it is not remission, but periods of apparent
stability in this downhill course?

A. I would think apparent
stability is probably the word. There may be changes
that are not visible. The liver size may be enlarging
while, apparently, the baby looks to be the same.
There might be gallop rhythm developing as, again, there

21

22



1

BB8 2 are signs that can only be elicited by physical
3 examination.

4

Q. Or by monitoring?

5

A. Monitoring would simply
show that you had a relatively fast heart rate. It
would not detect gallop rhythm.

7

Q. On page 53 and 54, there
are the notes of the last hours of Matthew Lutes.

9

there is a note for November 16 from nine o'clock in
the morning until seven o'clock at night. It
records:

12

"Respirations - increased all day
from 86-59, averaging high 70s.

14

Substernally indrawing plus tugging.

15

Baby becomes very restless with
feeds. Resiprations increase.

17

...Apex - regular and
stable. Increases when baby is
upset, 121-147.

20

Colour - fairly pink in
35 per cent oxygen, becomes mottled
and slightly dusky when baby is
upset. Circumoral cyanosis noted
later in shift."

24

25



1

BB9 2 Towards evening, the baby became
3 very blue around the mouth. I think that means
4 edema?

5 A. Yes.

6 Q. "Nutrition - fed by tube
7 every three hours. Last feed was
8 missed because it took a long time
9 to give the third feed. Fourth
10 feed given at 7:15, no fussing.
11 Patient becomes very upset and rest-
12 less and the respiration rate
13 increases when the feed is going
14 through. The tubes are in the
15 correct place by X-ray and testing
16 with air. Became very restless at
17 4:30 feed and did not settle as well.
18 Doctor is informed."

19 And told about the restlessness, I take it.

20 "Elimination - lasix 3 mg given at
21 1:40. Patient diuresed poorly."

22 Then, a very interesting note at the end of that
23 note, doctor:

24 "Called dad who flew in immediately.
25 Arrived at 18:00 hours."
What, through your practiced clinical



1

BB10 2 eye does that note say about this child in its
3 course?

4 A. That the baby is getting
5 worse, and the mother also seemed to feel that.

6 Q. Yes. She was concerned,
7 about wanting to hold the baby and so on.

8 A. Yes.

9 Q. On the next page, 54, I
10 think this precedes in time the note at the bottom of
11 page 53, we have the period November 16, 7:00 p.m.
12 until midnight. We have, "Vital signs - Apex 131-144
13 and regular."

14 One thing that does seem to have
15 been relatively regular and stable over this last
16 day is the heart rate of this child, does it not?

17 A. Yes.

18 Q. And its rhythm.

19 "Respirations continue to be
20 laboured. Substernal indrawing and
21 trachial tugging.

22 Nutrition - tolerating
23 full-strength formula, taken by tube.

24 All those things were recorded.

25 Baby appeared to settle well and sleep
for long periods. At midnight, the child was vomiting.
Clear mucus and small amounts of bile-tinged mucus.
Perspiring.



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Rowe
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BB11 2 "Colour is pale, somewhat dusky. Skin is clammy."
3 Heart increases to 160 and respiration becomes more
4 shallow and, at half past midnight, the doctor was
5 called and, then Dr. Costigan appeared.

6

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Q. "Baby became..." I'm not
sure what that word is. Before bradycardia.

3

A. Severely.

4

Q. Is it severely?

5

A. Yes.

6

Q. "And cardiopulmonary
resuscitation started at 10 minutes
to 1:00 in the morning."

7

A. Yes.

8

Q. And the baby was pronounced
dead at 1:34, Nurse Nelles' note.

9

A. Yes.

10

Q. Can you go back to what
Dr. Costigan wrote in the chart at the bottom of
page 53. It is clear, is it not, that he was
not summoned to this baby, he just wandered in
to see Matthew?

11

A. It says there - no, that's
correct, I am sorry.

12

Q. Indeed that is consistent
with Nurse Nelles' note that then Dr. Costigan
appeared, it was not he whom she had called.

13

A. No.

14

Q. He came by to see this baby
and we may draw an inference from that I take it.

15

16



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2

The nurses and the doctors were concerned with him
because of recent diaphoresis is that?

4

A. Yes.

5

Q. And vomiting of what material?

6

A. I think that is bilus.

7

Q. Bilus material. Thank you.

8

He examined the child and while he is examining him
the child arrests?

9

A. Yes.

10

11

12

Q. And they start their

resuscitation procedures doing what they can but
they are unable to revive him.

13

14

15

In the course of that investigation
before the child goes into arrest he is breathing
fast, he has poor peripheral circulation, cold
clammy skin, a very distressed baby.

16

17

18

19

20

Doctor, would you categorize the
onset of critical symptoms of terminal events as
sudden in the way that we have categorized the
onset of other events, similar events in other
babies as sudden?

21

A. Yes.

22

Q. This was as sudden as some

of those?

23

A. Yes, he had been declining

24

25



Rowe, dr.ex.
(Lamek)

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CC3
but I think the event that ended everything was
very sudden.

4

5

6

We have got one more note on the
arrest, page 55 is a list of the medications given
in the course of the arrest.

7

A. Yes, it is.

8

9

10

And Dr. Costigan, I am sorry,
back on page 53, records the patterns of response
to adrenaline in any event and the final paragraph:

11

12

13

14

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"No real response had wide complex
low heart rate at times but was
unresponsive to adrenaline. Produced
fibrillation and defibrillate and
then would go into slow irregular
rhythm."

16

Apparently.

17

A. Yes.

18

19

So we have got that pattern
and mix in the sequence of arrhythmias that we have
seen before.

20

A. Yes.

21

22

23

24

For the January 12th, 1981
meeting, Dr. Rowe, you didn't include Matthew Lutes
in your list and therefore he was not categorized
as either an expected or an unexpected death

25



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2

CC4 according to your definition of those terms.

3

4 May I ask you to categorize him
now for the purposes of that meeting?

5

6 A. I would have categorized him
as an unexpected death.

7

Q. An unexpected death?

8

A. By those definitions of
9 that particular meeting.

10

Q. And for what reason?

11

A. Because he had a malformation
12 that I think we would have hopes that we might be
able to do something with.

13

Q. Surgically?

14

A. Yes.

15

Q. Did you however regard the
16 time and manner of his death as consistent with
17 his anatomical cardiac problems and with his clinical
condition?

18

A. Yes.

19

Q. Can I ask you about this
20 child, the time of his dying was it also consistent
21 with digoxin intoxication?

22

A. Yes.

23

Q. When did you first review
24 this baby's death?

25



CC5

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A. I think it was in late

December. No, it wouldn't have been late December,
it must have been after that time, I don't know
when it was.

6

7

8

Q. Did it occur to you then

that his terminal course and events was consistent
with digoxin intoxication?

9

A. No, no.

10

11

12

13

14

15

16

17

18

19

Q. I take it you were satisfied
that the course of death was the clinical condition
of the child resulting from his cardiac malformations?

A. Absolutely, yes.

20

21

22

23

24

25

Q. At the time or at any time
after his death, did any other cardiologist in your
division, or any Cardiac Fellow raise any question
with respect to the cause of death of Matthew Lutes?

A. I don't recall that anybody
did. That may have been mentioned at the meeting
while I was away but in the report of it to me later
I didn't get that message.

Q. Matthew Lutes, yes, he died
while you were away, did he not?

A. Yes.

Q. When you say a meeting while
you were away was there a meeting in November?



1

2

A. The daily meetings, yes.

3

Q. That is what you are
referring to?

4

A. Yes.

5

MR. LAMEK: Excuse me a minute,
6 Doctor.

7

Q. Perhaps we can move along
8 to the next one, Doctor. The next child we come to
9 in chronological sequence is John Onofre who died
10 on December the 9th, which I take it was very soon
11 after you returned from your long trip?

12

A. Yes.

13

Q. And do you recall a
14 discussion at one of these cardiology morning
meetings on the death of this child?

15

A. I don't remember specifically
16 but I am sure it was discussed.

17

Q. Can you tell me, please,
18 whether the diagram which is on the easel now
19 represents with reasonable accuracy the anatomy of
20 John Onofre's heart?

21

A. Yes, it is.

22

MR. LAMEK: May that be the next
exhibit please, Mr. Commissioner.

23

THE COMMISSIONER: Exhibit 86.

24

25



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CC7 ---EXHIBIT NO. 86: Heart Diagram of John Onofre.

3

4

MR. LAMEK: Q. Could you, Doctor,
please, describe the anatomy of that heart and the
respects in which it differs from the normal heart?

A. This heart is the most severe
form of the classical blue baby condition or
tetralogy of Fallot. There is a large ventricular
septal defect in this position. There is no exit
or blood into the pulmonary artery from the right
ventricle because the valve is atretic or completely
sealed. The pulmonary arteries beyond that point
are small and the only blood supply to that lung is
through the ductus arteriosus at the time of birth.

The rest of the anatomy is a reflection
of that, the arrangement of the attachment of
arteries to chambers is normal and veins to chambers
is normal. The only difference is the right side
of the heart is thicker because the pressure in
this chamber is now the same as in the left side.

This diagram also indicates what may
have happened in the way of surgical treatment to
this baby and again a subclavian artery has been
transacted on the right side this time and
anastomosed to the right pulmonary artery. That
is a Blalock-Taussig anastomosis which is done to

25



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increase the amount of blood going to the lungs.

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So venous blood comes in in the usual way to the right side of the heart and then it has two opportunities, one is to go out - I am sorry, it has only one opportunity, this one is to go out through the ventricular defect into this side and mix with blood that has come back from the lungs, and then that combined output goes into the aorta, some of it would go through the ductus arteriosus while it is patent and that amount will come back to this left side. Because it is a small vessel it is likely that there will be a relatively small amount of blood going through the lung therefore there is not very much oxygenated blood, or pink blood to mix with the blood that is coming from this side. So one would expect as soon as the ductus starts to constrict severe problems with lack of oxygen.

Q. Thank you. Again if I may summarize the course of that child in hospital at the Hospital for Sick Children. He was admitted on November the 22nd from the Women's College Hospital. He was then a day old. He was referred, as I understand it to your Hospital because there were irregularities in his heart beat, heart rate. He was cyanose. He cried. There was a question



CC9

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that he might have congenital heart deformity.

3

A. Yes.

4

Q. That was on November the
5 22nd.

6

The following day a two dimension
7 echocardiogram and cardiac catheterization was
8 carried out. The diagnosis from those two investiga-
9 tions was the tetralogy of Fallot and other defects
10 that you have described.

11

A. Yes.

12

Q. And the very next day, on
13 the 24th, he went into surgery for the Blalock-
14 Taussig shunt you have told us about, and I take it
15 that falls into the category of palliative surgery,
16 does it not, Doctor?

17

A. Yes.

18

Q. And thence from the OR
19 Intensive Care Unit where the regular heart beat
continued, but otherwise the post-operative course
there seems to be relatively uneventful, does it not?

20

A. Yes.

21

Q. December the 1st he is
22 transferred from the ICU to Ward 4B. The arrhythmias
23 continue. It was suspected at one stage he had
24 an infection, and although he has been on a regimen

25



1

2

3 of digoxin that I believe was discontinued two or
4 three days after he got back from the ICU, on
5 December 4th?

6

A. Yes.

7

8 Q. And on December the 9th,
9 3:20 in the morning suddenly his heart rate drops,
10 he suffers a cardiac arrest and he cannot be
11 resuscitated and he is pronounced dead at 4:15 in
12 the morning. That in capsule form is the cause of
13 this child's demise?

14

A. Yes, it is.

15

16 Q. Now, Doctor, can we have
17 your comments please on anything in the chart that
18 in your view is significant in helping us to explain
19 or to understand this baby's death and the time
20 and manner of his dying?

21

22 A. One of the unusual things
23 about this baby was that his presentation was
24 really dominated by the irregularity of the heart
25 beat. In fact when he came over to the Hospital
26 one of our senior cardiologists, Dr. Freedom had
27 as his principle concern that arrhythmia and wasn't
28 quite sure initially whether this was due to
29 congenital heart disease or whether it was due to
30 some disease of the heart muscle.

25

BMB jc
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2 It was fairly quickly evident that
3 there was a congenital cardiac defect of course, but
4 everything proceeded appropriately thereafter with
5 this baby as far as management was concerned, but
6 there was still concern about the arrhythmia.

7 When digoxin was started, and I'm not
8 quite sure whether that was done because the note
9 doesn't clarify things, because of the fact the heart
10 rate and the respiratory rate were increasing and
11 therefore it was thought possibly that there was
12 heart failure developing, or not, or whether it was
13 because there was a growing concern about the
14 arrhythmia, but at any rate, I think when the baby
15 got back to the ward there was a decision made to
16 discontinue the digoxin, since it hadn't influenced
17 the arrhythmia.

18 Q. Yes.

19 A. Perhaps since it hadn't
20 influenced the arrhythmia. I can't read the mind of
21 the cardiologist exactly on that point.

22 Q. All right.

23 A. There was a lot of pus in the
24 wound and I think that also caused some concern.
25 There was some other problems with the bowel which
initially they thought the bowel, there was some
necrotizing problem in the bowel but presumably that



DD.2

1

2 turned out to be a viral infection, although, it
3 produced a lot of bloody stool and I think there was
4 some concern about that.

5 So, there were a number of things
6 going on there that were occupying people.

7 I gather that the septic work-up in
8 the antibiotic that was conducted appeared to be
9 reasonable steps in case the baby was suffering from
10 bloodstream infection, but there was other evidence
11 later that argues that that wasn't successful from
12 the post mortem. I mean, there is no question that
13 baby had very extensive septicemia.

14 And then there was - it's a bit hard
15 to tell from looking at it - the baby was quite still
16 blue crying and whether or not there was a problem
17 with the shunt being large enough rather than too
18 much was another issue that I would think might have
19 been raised, and I believe that was one of the
20 concerns of Dr. Izukawa.

21 So, there were several things there:
22 the irregularity of the heart, which is always of
23 some concern in a small baby, especially if there is
24 congenital heart disease.

25 Although that didn't appear to be
26 doing anything very much to the baby during this time,

27



DD. 3

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2 it is always a worrisome development because you are
3 never quite sure what is going to happen next.

4 Q. Yes.

5 A. I think the septic question is
6 an important one, as it turns out probably the most
7 important one. The fact that the shunt at autopsy
8 was quite small, only 2 millimetres in diameter,
9 would argue that there may be a number of events
combining to create a very precarious situation.

10 Q. Doctor, before we go any further
11 with any part of this, can we just address the
12 question of the discontinuation of the digoxin
13 administration?

14 A. Yes.

15 Q. It appears from page 106 of the
record, that the order to begin digoxin was on
16 December 28th where a series of digitalizing doses
17 is ordered.

18 A. Yes.

19 Q. The first to be given immediately
and thereafter maintenance doses twice a day to .015
20 milligrams.

21 Now, whatever the reason may have
22 been for the discontinuance of digoxin, it does not
23 appear to have been any concern about the level

24

25



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2 reported, there was only one digoxin level reported
3 that I'm able to find, it is on page 125 and records
4 the level of 1.1, which is entirely satisfactory and
5 no cause for any concern and I see nothing in the
6 progress notes in the first two or three days of
7 December to suggest that there were any clinical signs
8 that would even make anyone question digoxin
9 intoxication?

10

A. No, I think that's right.

11

Q. Is that fair?

12

A. Yes. That rhythm is very unlikely
13 to be related at all because it had been there before
digoxin was even given.

14

Q. Yes.

15

A. Yes.

Q. So, the inference that you draw
16 may be the right one, Doctor, that it wasn't doing
17 any good as far as the arrhythmia was concerned?

18

A. Yes.

19

Q. And it was therefore discontinued?

20

A. Yes.

21

Q. It certainly doesn't appear from
the chart, does it, that it was doing any harm?

22

A. No. I think that the only reason
I can believe that somebody started digoxin in that

23

24

25



10.5

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2 situation was because they thought the origin of
3 the arrhythmia was at atrial level and that it wasn't
4 premature ventricular contractions. I think that
5 Dr. Izukawa on the floor felt that they were
6 ventricular contractions and I think he probably
7 decided that drug was not the drug of choice for
8 that treatment anyway and, so, discontinued the drug.
9 My understanding is that he made a decision not to
10 treat the arrhythmia.

11 Q. Now, Doctor, for purposes of
12 your meeting on January 12, 1981, this death was
13 categorized as unexpected?

14 A. Yes.

15 Q. In what respects, applying the
16 definition you had for that meeting, was it unexpected?

17 A. Well, unexpected because under
18 the conditions that we use the term for that meeting,
19 this was not a condition where we would have regarded
death as inevitable and we would have hoped to have
got this baby further through.

20 Q. Now, you say you would have
21 hoped that something might have been done for this
22 baby but unfortunately his death intervened, I take it?

23 A. Yes.

24 Q. To the extent that there was a

25



DD. 6

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2 hope that something might have been done for this baby,
3 is it fair, therefore, to say that by perhaps a wider
4 definition than yours, this death was unexpected at
5 the time that it occurred?

6

A. Yes.

7

Q. And therefore when in the final
8 autopsy report at page 33 of the record, the pathologist
says at the end of the final paragraph on that,
9 beginning of the final paragraph on that page:

10

11

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"Death in this case was somewhat
sudden and unexpected, being manifested
by sudden onset of bradycardia and
cardiac arrest."

That in this case is not a character-
ization with which you would disagree, I take it?

A. No.

Q. No. I don't want to go on with
the rest of that paragraph at this time, Doctor,
because the final pathological report of autopsy
wasn't in your hands at the time you were considering
these deaths at the end of 1980, was it?

A. No.

A. No.

Q. And therefore for purpose of
what you then, what you and everyone else then knew



DD.7

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2 or believed, it is the preliminary autopsy report
3 we need to focus on. I want to come back to that
4 later on, maybe next week, when perhaps a number of
5 these deaths might have been looked at in a different
6 light, as indeed the pathologist appears to have
7 looked at this one in a different light?

8 A. Yes.

9 Q. But for the most part, let's
10 stay with what was in your mind at the time of the
11 death, or at the time you were preparing for the
January 12th, 1981 meeting.

12 It would be recognized - you did
13 recognize it you say as a sudden and unexpected death?

14 A. Yes.

15 Q. Was anything significant
16 revealed at autopsy that wasn't previously known?
17 For this purpose let us refer, as I say, to the
preliminary autopsy report, which is at page 29.

18 A. Yes, I think there is a reference
19 to banding the process of the myocardial septum No. 2
20 on page 30.

21 Q. Yes. Can you tell us please
22 what the significant -- first, what it is and then
what the significance of it is?

23 A. No, I'm not a pathologist but

24

25



PP.8

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2 it is a change in the appearance of the muscle
3 indicating injury. If you want something more
4 detailed, I'm afraid you will have to ask Dr. Phillips
5 for that information.

6

Q Very well. Does not necrosis
refer to tissue in this case?

7

A Well, it's a form of muscle
injury, as far as I can see.

9

Q All right. Forgive me, Doctor,
10 if I cannot get the meaning or significance of that
11 from you, how are you able to tell me that that was
12 a significant piece of information from autopsy?

13

A Because it is a degree of injury
to muscle that might conceivably be related to the
development of arrhythmias.

15

THE COMMISSIONER: I wonder if I
16 could just interrupt just for a moment?

17

MR. LAMEK: Yes, of course.

18

THE COMMISSIONER: This document is
19 obviously misdated. It is dated December 9th, 1980
20 and it refers to a matter that clearly took place
21 later on. It refers to something that took place
22 in June 30th, 1981. Is there any other date on this
anywhere?

23

MR. LAMEK: Mr. Commissioner, are we
24 looking at the same page?

25



DD. 9

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2 THE COMMISSIONER: I think so.

3 MR. LAMEK: Page 29. I think you are
4 looking at the final autopsy report, sir.

5 THE COMMISSIONER: Oh.

6 MR. LAMEK: Page 29 is the preliminary
7 autopsy report, which is what Dr. Rowe had available
8 as at the end of 1980.

9 THE COMMISSIONER: Oh, I see, all right.
10 Well, I'm looking at, I guess, the final one. But I
11 just mention in passing that it is misdated.

12 MR. LAMEK: Well, with respect, sir,
13 I understand the date is to refer to the date of
14 autopsy not date of report.

15 MR. SCOTT: Perhaps Mr. Lamek might
16 clarify with the witness if he can how that happens.
17 There is an explanation for it.

18 MR. LAMEK: Yes.

19 THE COMMISSIONER: Oh.

20 MR. LAMEK: Well, perhaps we should
21 do that and then perhaps we could go away and think
22 about it for a few minutes.

23 Page 29, Dr. Rowe, can you help us?
24 The document is a preliminary autopsy report and I
25 see a number of dates on it but the only one that
says date in an unvarnished way reads December 9, 1980.



DD.10

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2 Is it your understanding that that is the date upon
3 which the document is prepared or the date upon
4 which the autopsy was performed whose findings are
5 reported in a preliminary way in this document?

6 THE WITNESS: I think that's the date of
7 the autopsy because the date of the death is on the
8 lower portion on the left side of the same group of
lines.

9 THE COMMISSIONER: It may be but it
10 is a strange way to conduct business because the date
11 of the autopsy should be titled the date of the
12 autopsy and the date should always be the date when
13 you prepare a document. But it is too late I'm sure
14 to change the system.

15 THE WITNESS: Mr. Commissioner, I am
16 not sure exactly and I am making an assumption here
17 and I think the only person who can clarify that for
us is Dr. Phillips.

18 MR. LAMEK: I will tell you, Doctor,
19 I have been frustrated throughout trying to find a
20 date of the report, whether it be the preliminary or
the final one.

21

THE WITNESS: Yes.

22

MR. LAMEK: Q. But is it fair to say

23

24

25



DD.11

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2 that the preliminary report which, as I understand,
3 reports the growth pathology findings at autopsy,
4 is available very quickly, within a matter of a day
5 or two usually?

6 A. Yes, very soon.

7 Q. But the final autopsy report,
8 which includes all sorts of other information,
9 microscopic examination of tissue and so on, is often
not available for two or three months?

10 A. Yes.

11 Q. Indeed, sometimes longer?

12 A. Yes, I think that's a reflection
of what it is. Again, Dr. Phillips is the man to ask.

13 Q. But in neither case does the
14 report bear a date of its own, a date of its making,
15 does it?

16 A. I don't see one.

17 THE COMMISSIONER: Well, are you
18 going to ...

19 MR. LAMEK: I'm in your hands entirely,
20 Mr. Commissioner, if you want to take a short break,
21 this is perhaps as good a time as any.

22 THE COMMISSIONER: Well, no, it might
be better to finish this child if that can be done.
23 Obviously it can't be done that quickly.

24

25



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(Lamek)

2472

DD.12

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2 MR. LAMEK: No, I think I can. Let
3 me take a shot at it at any rate. It may be done
4 more quickly if I take a break.

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Q. Is it fair to say, Dr. Rowe, that Dr. Freedom and Dr. Trusler, Dr. Trusler having performed the surgery in this case, were apparently optimistic about this baby's prospects?

4

A. Yes.

5

6

7

8

9

Q. Dr. Trusler's reporting letter to Dr. Freedom is on page 9 of the record, is it not, reporting upon the surgery, saying in the last sentence of the long paragraph:

10

11

12

"We decided to heparinize the child and I have every hope that he will have a good result."

13

A. There is a caveat there.

14

Q. What is that, please?

15

16

17

A. That is that the sub-

clavian artery was only 3.5 mm in its mid-area and there is a degree of spasm and this should open up with time.

18

Q. Certainly, there is a

19

caveat. Dr. Trusler, however, appears to be reasonably optimistic about the outcome?

20

A. Yes.

21

Q. And when Dr. Freedom wrote to his referring physician on November 24, page 12 of the chart --

22

23

24

25



EE2

A. Yes.

Q. -- he was reporting merely upon the diagnosis at that time, was he not?

A. Yes, he was.

Q. But his sort of "P.S.", footnote, "addendum" reports that the surgery was successfully performed on the morning of the 24th of November.

A. Yes.

Q. Again, I think we can characterize the letter as reasonably optimistic, can we not?

A. Yes.

Q. Just as you have said, these people, too, seemed to have hoped there was something they could do for this baby.

A. The caveat in that letter, if I may point it out, is the growth of the pulmonary arteries.

Q. The small main pulmonary artery?

A. "...the long-term outlook for this youngster depends on promoting the growth of the pulmonary arteries..."



1

EE3

2 Q. Yes.

3

A. But I would agree that,
otherwise, that is --

4

5

Q. And in the post operative
period, the immediate post operative period, the
baby seemed to be doing pretty well?

6

A. Yes.

7

Q. He went back to the ward
and, although he had to be watched closely, his
return to the ward suggests, does it not, that he
was not considered to be at risk of imminent death
at that stage?

8

A. No.

9

Q. He was stable.

10

A. Yes.

11

Q. We have talked about the
digoxin course that he had. What about this child's
terminal events? Can we look at page 61 of the
chart, please. The notes really run between 61 and
64. Perhaps we could start at page 64, because that
is the note of events starting from 3:10 in the
morning, the nurse's notes.

12

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Apparently this child, too, is
connected to a cardiac monitor.

"Cardiac monitor showed irregular



Rowe
dr.ex. (Lamek)

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EE4 2 rhythm with long pauses between
 3 beats. When listened to with
 4 stethoscope the same was heard.
 5 Bradycardic. Heart rate 88. When
 6 baby waked up by nurse, heart rate
 7 100. Notified Registered Nurse
 8 to stay with baby. Baby then
 9 arrested at 3:19."

At that stage, can we go back to
10 page 61. At 9/12, at five o'clock, the note is made:
11 "Called STAT..."

12 And I take it that means "called immediately"?

13 A. Yes.

14 Q. "...at 3:20 a.m. Baby was
15 noted to be bradycardic. When
16 arrived heart rate 40-100 and variable.
17 Baby crying. IV infusing well.
18 Pulse palpable. Called Medical
19 Resident. Arrest at 3:29 - Arrest
Team arrived. Junctional rhythm
noted."

20 Is that what we talked about this
21 morning?

22 Perhaps I had better ask you, if I
23 did not ask you before, what is "Junctional rhythm"?

24

25



Rowe
dr.ex. (Lamek)

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EE5 2 A. Yes, I think we did talk
3 about that before. "Junctional" is a rhythm that is
4 not starting in the sinus node but starts nearer the
5 atrioventricular node.

5

Q. It goes on:

6

"Patient was incubated, received
7 CPR..."

8

A. CardioPulmonary resuscita-

9 tion.

10

Q. "...did not respond.

11

Stopped at 4:10.

12

Etiology not obvious.

13

Did not appear septic. Was on
ampicillin and gentamicin. No
other medications. Not dehydrated
clinically."

14

15

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There was some discrepancy between
the nurse's noting of times and the Arrest noting of
times, at ten minutes apart, am I correct, the
nurse's time of arrest and the Resident's time of
arrest? Nevertheless, we have a pattern that is
pretty clear, do we not?

A. Yes.

Q. Again, there appears to have
been a sudden onset of these terminal events;



1

EE6 2 arrhythmia, bradycardia and a rapid decline that
3 cannot be reversed?

4 A. That is correct.

5 Q. With the notation that
6 the cause of all this is not obvious, the etiology
7 is not obvious. We have fibrillation at some point.
8 At page 62, at the top of the page - yes, go into
9 defibrillation, which I assume implies that it was
first fibrillation?

10 A. Yes, that is after the
11 resuscitation was started.

12 Q. In the course of the
13 resuscitation effort.

14 A. Yes.

15 Q. Is it not, doctor, very
16 much like the pattern of sudden onset and rapid
17 progress that we have seen in a number of the deaths
18 that we discussed yesterday and last week?

19 A. Yes.

20 Q. Were you satisfied that
21 this death, including the time and the manner of
22 onset and progress of the terminal events, was con-
23 sistent with the physical condition and the clinical
24 condition of this child?

25 A. I think we were just



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EE7 2 || surprised at that particular moment. We were not
3 || surprised when we got all the rest of the information.

THE COMMISSIONER: Sorry, you were
not surprised...?

THE WITNESS: We were not surprised
6 after we got all the information from autopsy. I
7 think it was thought at the time that the most likely
8 explanation for the death was that the arrhythmia
9 that had been apparently benign all along became
10 more significant.

11 MR. LAMEK: Q. Yes.

A. The other explanation, following the autopsy information, was that there were features there that could account for the baby dying, the sepsus, which was extensive, and I'm not sure exactly when that information came through, and the small size of the shunt. There was a 2 mm orifice which was much smaller than you would hope for, so that hypoxia and sepsus might have created the arrest. These are conditions that can produce findings of this sort.

20 Q. I think we should take the
21 time, please, to go to the preliminary autopsy
22 report, which is what you had available to you in
23 January.

24

25



1

EE9 2 Q. You did not know that
3 before?

4 A. We did not have that
5 information during life.

6 THE COMMISSIONER: Sorry, where is
7 that? You knew that the size of the shunt was small?

8 THE WITNESS: Yes.

9 THE COMMISSIONER: Where is that?

10 MR. LAMEK: Is that 1(h)?

11 THE WITNESS: It does not say that
12 there, but we would have that information from Dr.
13 Freedom, who does the gross autopsy.

14 Q. Item 1(h), under the
15 anatomical diagnosis on page 29, refers to the
16 diameter of the shunt, does it not?

17 A. Yes. It is there,
18 actually, but we would have known that anyway.

19 Q. Would that have provided
20 a different explanation from the one that you might
21 have arrived at before seeing --

22 A. Yes, I think so.

23 Q. In what respect?

24 A. I think that would confirm
25 that the amount of blood going through that shunt
was extremely small, so the hypoxia might have



Rowe
dr.ex. (Lamek)

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EE10 2 triggered, in a patient that had arrhythmia, a more
3 important disturbance.

4

Q. Anything else in the
5 autopsy report that provided you with information --

6

A. The banding necrosis just
7 strengthens the question of whether or not the
arrhythmia might have been related to muscle damage.

8

Q. When this information be-
9 came available, what was your understanding of what
10 that finding involved?

11

A. The finding of the muscle
12 banding?

13

Q. Yes.

14

A. That would imply damage
to muscle which caused the arrhythmia.

15

Q. Without knowing the extent
16 of the damage, it would be very difficult to --

17

A. And to a portion of the
septum. It would not have to be very much.

18

Q. It would be hard to
19 include it as a causal development in this whole
thing, unless you had rather more information than
21 appears from this, would it not?

22

A. We have clinical information
23 that is unusual in that this baby, who had a

24

25



1

EE11 2 tetralogy malformation, was having arrhythmia --

3

Q. Yes.

4

A. -- from the time it

5

arrived, and that is an unusual finding in tetralogy of Fallot with pulmatresia. We know, in patients who die with tetralogy of Fallot after surgery, in infancy, there is damage of a type to myocardium. The exact cause of this is uncertain but it is thought to be some reduction in blood supply to the superficial layers of the muscle inside the right ventricle, and it has been postulated by others that this type of condition in certain babies with tetralogy of Fallot may be responsible for the mortality after surgery.

14

Now, that is as far as one can go.

15

We cannot be absolutely sure which effect predominated here, but my view is that there are a number of factors operating, each of which might have, on its own or together, created the situation that arose here.

19

20

Q. Dr. Rowe, you are, I must say, a physician who chooses his words with some care. I notice you said it is known that damage of a type to the myocardium septum can occur, and you have described the situations in which it is known that

24

25



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dr.ex. (Lamek)

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EE12 2 damage of a type can occur.

3

Is it damage of a type that

4

appears to be recorded here?

5

A. Yes.

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M/ak

Q. So having seen the preliminary autopsy report, hearing what Dr. Freedom had to say about the gross pathology, because I take it he had the information, can you tell me then if you are satisfied that the death and time and manner of the death was consistent with that enhanced picture of the anatomical condition and clinical condition of this child?

A. Yes.

Q. I take it too that once again the terminal events and the onset and course and pace are similarly consistent with digoxin intoxication?

A. Yes.

Q. Did any other cardiologists or Cardiology Fellow raise the question of some cause of death of this child, other than attributing it to its clinical condition as known from the chart and autopsy?

A. I don't believe so.

Q. We know that someone has raised that question at a later stage, a pathologist, and I am focusing, you are quite right in believing I am focusing on the period December-January of 1981.

MR. LAMEK: Mr. Commissioner, I



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would expect even if you want to take a short break
to be able to deal with one more child this afternoon
and still finish at about the normal time and that
will leave me two, I think, to deal with, no, I am
sorry, three and I am confident I can do those by
lunch time tomorrow if that is agreeable.

8

THE COMMISSIONER: Yes, all right.

9

Let us take 15 minutes.

10

---Short recess at 3:45 p.m.

11

---Upon resuming at 4:10 p.m.

12

THE COMMISSIONER: Yes, Mr. Lamek.

13

MR. LAMEK: Thank you, sir.

14

Q. Dr. Rowe, we have dealt with
a number of these charts today and can we come now
to that of D'Arcy MacDonald, please.

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D'Arcy MacDonald died at 4:30 in
the morning on December 13th, 1980. He was five
months old and he had been in the Hospital for
Sick Children for less than 24 hours and he was
transferred there in the afternoon of December the
12th from St. Joseph's Hospital in Hamilton, was he
not?

22

A. Yes.

23

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Q. Once again could you tell us
whether the diagram up on the easel is a reasonably

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Rowe, dr.ex.
(Lamek)

FF3

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accurate representation of the anatomy of that
child's heart?

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A. Yes, it is.

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MR. LAMEK: May that be the next
exhibit please, Mr. Commissioner.

7

8

---EXHIBIT NO. 87: Heart Diagram of D'Arcy
MacDonald.

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MR. LAMEK: Q. Would you please,
Doctor, explain the anomalies or defects in that
heart for us?

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A. D'Arcy MacDonald was a boy
who had Down's Syndrome and that is associated
very frequently with congenital abnormalities of the
heart formation. In his particular case the major
lesion was a large ventricular septal defect.

He had in addition an atrial
communication which was of moderate size, and the
combined effect of those two conditions, since all
the rest of the anatomy was normal, with one possible
minor exception, the major effect that blood flowed
from the left side of the chambers through these
defects into the right side. The consequence of
that is that the right side enlarged and the
pulmonary artery became big and there was mixing of
pink and blue blood in this top receiving chamber,

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the right atrium, and an overloaded circulation to the lung. So vastly more blood went out to the lungs than actually got out into the aorta and the rest of the systemic circuit because of the fact that there was this constant watershed of blood going through the defects.

The anomaly that is listed here is a representation of what is known as an accessory papillary muscle. The papillary muscle is normally only two in number and they are attached by these little strings that go all the way up to the leaflets of the atrial ventricular valves, or in this case the mitral valves and on the other side would be the tricuspid valve. This was an additional bar of muscle of that sort that occurred. So there were three I believe in the left ventricle instead of two. But just whether that had any impact on anything I think is doubtful.

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Q. Dr. Rowe, you have referred to Down's Syndrome, what is Down's Syndrome and what is its significance so far as the cause of this child is concerned?

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A. Down's Syndrome is a chromosome abnormality in which there is an extra chromosome at a specific point in the band of the



Rowe, dr.ex.
(Lamek)

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chromosomes and this defect gives rise to a child
who has characteristic facial appearances and other
defects, including mental retardation. The breathing
apparatus of this group is subjected to more stress
than the normal individual because of the fact
that they tend to have narrow upper air ways, and
that means that breathing tends to be difficult.
They have large tongues, and they are subject to
more respiratory problems than others and because
of the fact that their muscle tone is poor they
don't have good chest muscle performance. That
means that this group is more susceptible to
complicated features of congenital heart disease
because they have a combination of lung and heart
difficulties.

Q. Now, this child had been
in the hospital, St. Joseph's in Hamilton, from
December the 6th, and I am referring again to the
summary of his history and of course to the
discharge note, the death note on page 45 of the
record. He had been treated there as you said for
a respiratory infection and for congestive heart
failure. A heart murmur had been discovered shortly
after birth, and he was treated in St. Joseph's
with antibiotics Ampicillin, and with digoxin and

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Rowe, dr.ex.
(Lamek)

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diuretics presumably for the heart failure.

3

Apparently the heart failure did not resolve or come under control. It was also suspected was it not that the child had pneumonia?

4

A. Yes, it was.

5

Q. He was transferred to the Hospital for Sick Children on December the 12th.

6

On arrival at your Hospital the chest was x-rayed, there was an electrocardiogram and two dimension echocardiograms carried out.

7

The findings there was that there was an enlarged heart and the defects that you have described along with some ventricular hypotrophy, right ventricular hypotrophy.

8

Do I correctly summarize his history and the findings upon his arrival at your Hospital, Doctor?

9

A. Yes. The only thing I would add to that description of the comments in that second paragraph about the patchy densities in the chest x-ray which would be in keeping with the suggestion from the physicians in Hamilton that the baby might have pneumonia as well as heart failure.

10

Q. Thank you. The course of

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digoxin treatment started in Hospital and the digitalizing doses had been administered there, had they not?

5

A. No.

6

Q. And the maintenance dose from which he was being managed was continued at the Hospital for Sick Children?

7

A. Yes.

8

Q. Now, the evening of his admission his breathing was fast than at the time he had been admitted in the afternoon, around mid-day. Around midnight it was noticed that his heart rate was variable and a resident was called.

9

THE COMMISSIONER: There seems to be a sex problem, is this a boy or a girl?

10

MR. LAMEK: D'Arcy I would have thought was a boy, he is referred to as a five-month old boy and he was referred from St. Joseph's.

11

12

THE COMMISSIONER: Well, I have seen "her" several times in some of the reports.

13

14

MR. LAMEK: I think we saw that in the case of Alan Perreault as well, did we not and Dion Shrum?

15

16

THE WITNESS: Yes, it is a common disorder.

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THE COMMISSIONER: Is this a boy?

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MR. LAMEK: Well, looking at a different part of the anatomy and so you get confused and forgetful, Mr. Commissioner.

5

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THE COMMISSIONER: I am not sure, what does page ---

7

8

MR. LAMEK: Page 45, the opening sentence of the discharge report is "This five-month old boy".

9

10

THE COMMISSIONER: Yes, I must say this does say male. However, you will find there are all sorts of references to "her".

11

12

THE WITNESS: The place that you can most usually rely on the sex is from the admitting office and that would be on the face sheet of the record if you can find that.

13

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MR. LAMEK: Q. Is that the admitting discharge sheet?

15

16

A. Yes.

17

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THE COMMISSIONER: The only thing about it is, if you look on page 5 "girl".

19

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MR. LAMEK: On page 48, Mr. Commissioner, guided by Dr. Rowe, I found the admitting discharge sheet and in the top right hand corner it gives the birth date and sex which is

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FF9 3 totally proclaimed to be M.

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THE COMMISSIONER: Right, I will

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accept that.

6

MR. LAMEK: Q. I don't whether

7

Dr. Rowe is prepared to vouch for the admitting office?

8

A. Oh, yes.

9

Q. But that is what it records anyway. In any event, Dr. Rowe, at midnight on the day of his admission it was noted that his heart rate is variable, is it not, and a resident is called. At about 3:30, 3:35 in the morning the child was ill and pale and resident again notified of that. Five minutes later about 3:40 the child starts to cough, spit up some mucus. They suctioned to get rid of the mucus. There is a cardiac arrest, resuscitation effort which evokes absolutely no response and 45 minutes later he is pronounced dead.

18

A. Yes.

19

Q. Now the whole thing is a very rapid course, the baby is in the Hospital only a very short time, about 12 hours. Are there any particular matters in the record, Doctor, which you consider to be significant in our consideration of why this child died, when and in the manner that he did?

25



BMB. jc
GG

A. I think the most important issue is, one of a high probability, is that he had pneumonia, as judged by the chest X-ray and at least the suspicion of that, apparently, and the fact that at, was it 5 o'clock, I have a note somewhere about 5 o'clock, he started to have a lot of subcostal noisy respiration, subcostal breathing 57/74. I can't see where I had that, I looked before at that.

Q. Doctor, in that regard, may I refer you to the autopsy report. Would you expect to find some finding on autopsy if indeed this child had pneumonia?

A. If he had pneumonia, yes, he would indeed.

Q. Page 40.

A. Yes.

Q. On page 42, and I confess I do not know whether this be the preliminary or final autopsy report.

THE COMMISSIONER: Is this final on page 40, is that not it?

MR. LAMEK: It does on page 40, Mr. Commissioner, but then page 42 appears to be out of order. Whether it is out of order and should be immediately following 40 or whether it is out of order

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GG.2

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2 and should be following page 42, I know not; 40
3 being the final and 42 being the preliminary report.

4 But perhaps we should look at both
5 41 and 40 - well, 42, Doctor, the pathological discussion.

6 A. Yes.

7 Q. Toward the end of the paragraph,
8 that reports that a chest X-ray had shown
9 a cardiomegaly with an abnormal configuration
10 consistent with congenital heart disease and prominent
11 pulmonary vasculature consistent with a left/right
12 shunt. No areas of pneumonic consolidation was seen.
13 Is that of any assistance in the question whether
14 there was pneumonia here?

15 A. Well, I think that may
16 have been in the radiologist report but there is a
17 comment I believe from others. I can't remember where
18 that was. I can't remember where I saw that but there
19 is a comment somewhere written I believe ...

20 MR. STRATHY: I don't know whether
21 this is correct, but would it be on page 40, Item
22 No. 3, under Anatomical Diagnoses?

23 MR. LAMEK: Viral pneumonitis, is
24 that of any help, Doctor? Thank you, Mr. Strathy.

25 THE WITNESS: Oh, I thought you were
26 talking about clinical X-ray.

27

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GG. 3

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2 Q. No, I thought it was believed
3 that - it was suspected that the child had pneumonia?

4 A. Yes, I think that was because
5 of the history.

6 Q. Yes. Was there any confirmation
7 of that on autopsy?

8 A. Yes.

9 Q. Where do I find that?

10 A. Well, it is in the Preliminary
Report. It says under Anatomical Diagnoses:

11 "Congestion in the lungs query
12 bronchial pneumonia."

13 Q. Forgive me, does that seem to
14 be saying any more than the physicians had said during
15 the life of this child, "Query, does this child have
pneumonia?"

16 A. No, it doesn't, other than at
17 least there is some suspicion in the pathologist's
18 mind there is pneumonia.

19 Q. As there had been in the
20 clinician's mind?

21 A. Yes.

22 Q. Now, you referred then to the
23 suspected pneumonia. Is there anything else that is
24 of particular significance that should be borne in

25



GG.4

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2 mind when considering the death of this child?

3 A. I think just severe failure,
4 not responding well to medication and continuing
5 obvious signs of failure with a suspicion of pneumonia.

6 Q. Doctor, was this child, do
7 you consider that this child was manifesting any of
8 the symptoms of digoxin toxicity? I ask you that
9 question because the possibility is expressly
10 mentioned three times in this very slender chart. I
refer you to page 31 first.

11 A. Yes.

12 Q. St. Joseph's Hospital, the
13 question had been raised, is it dehydration, hypo-
14 kalemia, is it digoxin toxicity, and it is proposed
15 to withhold digoxin. It occurred to someone at that
16 stage, before he reached you, that there may be some
question of toxicity with digoxin?

17 A. Yes.

18 Q. Are you able to discern from
19 that not very good copy, the page from the
20 St. Joseph's Hospital records, what had given rise to
that question, Doctor?

21 A. It may be the -- no, I thought
22 that was vomited, but it was urinated, but I can't
23 see anything ... maybe the heart rate of 90 to 100,
24 that seems to be underlined.

25



GG.5

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Q. Yes, the top of the page.

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A. That might have raised the

question I suppose.

5

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Q. Is that a relatively slow rate

for an infant?

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A. Someone who is having pneumonia

you would have expected a little faster than that I

suppose. So, it's not a very strong point but it is

certainly a point that might be reasonably considered

as an effect.

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Q. Well, could I refer you next
then to page 58 which is a note from the Hospital
for Sick Children. The note of the residents on call
in the middle of the page.

A. Yes.

15

16

Q. This is the arrest note in

fact:

17

"Called at 0335 ... "

18

19

what's that, something pallor and baby not looking
right?

20

A. Yes.

21

Q. Vital signs given on the phone,

22

heart rate 160, respiration 80, blood pressure 80,
arrive on ward and so on. He reports what he found
there. Baby pale and crying, chest very noisy,

23

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GG.6

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2 heartbeats heard but regularity not assessed since
3 the child immediately coughed and choked on some
4 mucus secretions. Ordered the child to be suctioned
5 and turned baby on side waiting for suction tube -
6 suction performed in mouth - child became limp,
7 heart stopped, although - what's that - monitor,
still indicating 160 to the minute.

8

A. For a few seconds.

9

Q. For a few seconds. Resuscitation started, and I can't read that, and 25 called, Dr. Fowler notified, parents notified.

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Impression, and there seems to be four explanations that are being canvassed by the resident for all of this: vagal reflex, arrhythmias, digoxin toxicity, and poor conduction system, something.

A. Associated with heart defect.

Q. Associated with heart defect,

thank you. That the resident who was present at the time of the resuscitation effort, in canvassing the possibilities that occurred to him, has explanations for this event, included among them the possibility of digoxin toxicity.



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A. Yes.

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Q. Does that seem to be fair?

4

A. Yes.

5

Q. Indeed, Doctor, isn't it

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fair that all four of the possibilities that he
canvasses may not indeed be four; they may all be
one, may they not? Vagal reflex, I take it he is
talking about some reflex action of what, the vagus
nerve?

10

A. Yes. That is induced by
the choking and so on.

11

Q. Yes. But is not digoxin
also known to have an effect on heart rate through the
vegal nerve?

14

A. Yes.

15

Q. Arrhythmias, aren't
arrhythmias a symptom of digoxin toxicity?

17

A. Yes.

18

Q. And digoxin does, at
toxic levels, affect the conduction system, does it
not?

20

A. Yes.

21

Q. And therefore is it fair
to say these may not be four different possibilities
but different aspects of the same single possibility?

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GG2-2

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Q. And, indeed, if his

speculation or suggestion of digoxin toxicity is right, that may itself explain vagal reflex, the arrhythmias and the poor conduction, may it not?

A. Yes.

Q. Now, the final reference to the possibility of digoxin toxicity in this chart is at page 47, and it is in the Discharge Report. Perhaps it is fair to read from the bottom of page 46. This is a note apparently dictated on the 15th of December, bottom of page 2:

"The immediate cause of death could not be ascertained at the time of dictation. It could have been due to a vagal reflex elicited by the suction manoeuvre but arrhythmias or poor sinus function related to the heart defect are also to be considered. Digoxin toxicity was not suggested by the Admission ECG. Other possibilities, such as dehydration or acid-based imbalance or electrolyte imbalance, seem at this stage to have been unlikely in view of the child's clinical status



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GG2-3

2 and biochemical analysis."

3

It appears, does it not, that

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Dr. Halperin, in writing this Discharge Note, is
going through the list of possibilities which had
been canvassed by the Resident at the time of arrest?

6

A. Yes.

7

Q. And suggests that the
admission ECG would not have suggested digoxin
toxicity. That assumes, does it not, that toxicity
arose prior to the child's arrival at the Hospital
For Sick Children?

11

A. Yes.

12

Q. Yes. And if, indeed, the
toxicity occurred as a result of something that
happened after the child's arrival, then the observa-
tion as to the tracings on the admission ECG would not
have a bearing, would they?

17

A. No.

18

Q. An autopsy was performed
on this child, was it not?

19

A. Yes.

20

Q. And the final report is
found at page 40, and we have already looked at it.
It does not appear to express there an opinion as to
the cause of death, does it? There is no opinion

24

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GG2-4 2 expressed in the Autopsy Report as to the cause of
3 death, is there?

4 A. I don't see any opinion.

5 Q. No. Well, there is a
6 suggestion that I hear from behind me, a sort of
7 caption line, Final Autopsy Report, Down's Syndrome,
viral pneumonia.

8 Is that where the cause of death
9 is normally stated if the pathologist feels able to
10 identify one?

11 THE COMMISSIONER: I'm sorry, where
12 is that, please?

13 MR. LAMEK: It is immediately
14 below the printed part on the page, on page 40, Mr.
Commissioner.

15 THE COMMISSIONER: Oh, yes, I see.

16 MR. LAMEK: In block capitals
17 where cause of death normally is stated.

18 A. Yes. I think that is
19 probably summarizing the main features that are put
20 there. I don't think everything is placed there but
21 the main features. I'm not sure whether that is
22 always so or not. Again, I think Dr. Phillips is
23 the only recourse.

24

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P/ak

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Q. We may have to wait for the
pathologist to find out about that then.

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For the purposes of the meeting that
was held on January 12th, 1981, Dr. Rowe, this
death was classified as "unexpected".

4

A. Yes.

5

Q. Can you tell me what caused
it to be placed in that category, as defined by you?

6

A. Again he is a patient, although
with major defects of the heart, defects that we
would hope to have been able to bring the baby
through and repair eventually, despite the severity
of the heart failure, so that death was not
inevitable in this patient and therefore he was
put in that category. The questions that were
to be addressed there were what possible additional
things might have been done to avoid the course that
eventually followed.

7

Q. Yes. This child died,
Doctor, when you were back at the Hospital?

8

A. Yes.

9

Q. At what stage did you review
the chart and this child's course and the circumstances
of his death?

10

A. I would have heard about his

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death on the Monday, I suppose, I cannot remember exactly, but that would be the course of events. We would have discussed his death in more detail for the purposes of the review later in December.

Q. All right. In the course of any discussion or review that you conducted or were involved in did you find any reason to suspect that this child's death should be ascribed to anything other than his anatomical and clinical condition, as disclosed in the chart itself and the autopsy?

A. No.

Q. Did you not consider the possibility of digoxin intoxication?

A. No.

Q. Were you aware of the references to the possibility of digoxin intoxication in the chart?

A. I cannot recall whether I was, but the opinion of the cardiologist involved was clearly that he died of pneumonia and heart failure, and that sounded appropriate from my point of view.

Q. I take it, although I had not asked the question in this case, but I take it that once again the terminal events and the manner



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of their onset and their course are consistent with
digoxin intoxication in the way that you have
framed an answer to that question previously.

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A. Yes.

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MR. LAMEK: Dr. Rowe, thank you.

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Mr. Commissioner, that leaves me
with three charts to deal with. I think they can
be dealt with comfortably tomorrow morning, if this
is an appropriate time to break for today.

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THE COMMISSIONER: Yes, all right,
until 10 o'clock then tomorrow morning, and just
to remind you, if we do manage to get away on
tomorrow afternoon we will make up for that slothful-
ness by coming back on Monday at 2 o'clock.

MR. LAMEK: Mr. Commissioner,

before that is writ in stone, I understand from
Mr. Ortved that Dr. Rowe does need time to prepare
for the examination.

THE COMMISSIONER: And he may not
be able to prepare by ---

MR. LAMEK: I understand he may have
some difficulty in being ready for Monday afternoon.

THE COMMISSIONER: Can you give us
a reasonable explanation that we will be finished
by Thursday?



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2

3 MR. LAMEK: If we start on Tuesday
4 we will have all of three days and there are some
5 14 or 15 files to do. I cannot give you my solemn
6 undertaking but I think we will come very close.
7 Even if we do not, we will have one or two to
8 finish when we come back.

9

10

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13 THE COMMISSIONER: That will not
14 worry you nor the Doctor, but it may make it more
15 difficult for the others to cross-examine, if there
16 are one or two that we still have not done.

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MR. LAMEK: I understand. It would be much more satisfactory if we could be assured that we would finish it. It may be, sir, I will suggest to you, that on Tuesday and Wednesday when we see the pace at which things are travelling that we sit a little later than 4:30.

THE COMMISSIONER: All right. Then I withdraw that last threat, but tomorrow at 10 o'clock.

MR. LAMEK: Thank you, sir.

---Whereupon the hearing adjourned at 4:45 p.m. until Thursday, July 21st, 1983 at 10:00 a.m.

